

K. & S. Peru - 1929
I
21500 - 23215

- 21501 *Malvastrum* H ± 3' pet. w.
 2 *Milcaia* H U. cor. tube gr. w., lobes & sty. w.
 3 *Eupatorium* S 3-8' cor. tube grish, lobes & sty. pinkish.
 4 *Baccharis* S 2-4' cor. & sty. w.
 5 *Hydrocotyle bonariensis* H pet. grish. w.
 6 *Speruacoe* repent H ~~heads grish.~~ cor. w.
 7 *comp. (Spilanthes)* repent H heads grish. w.
 8 *Paspalum* H 3-4'
 9 *Lennea*
 10 algae
 1 *Oxolla*
 2 *Scirpus americanus*
 3 *Cyperus*
 4 *Asclepias curassavica* H 1-3' cor. br. r. - canna y.
 5 *Anoda* H subprostrate pet. w.
 6 *Meibomia* H prostrate pet. w., faintly p. tinged.
 7 *Meibomia* U herb. pet. blue, sta. w.; lvs. mottled with w. along midvein.
 8 *Mimosa* S with elongate branches bil. rich p.
 9 *Acacia macracantha* T. with rounded crown, 10-15' pet. & gynoecium pur; pet. reflexed; ant. grish.
 20 *Wissadula* S 1.5-2' ant. & ant. br. y.
 1 *Abutilon* S 4-6' cor. br. r.
 2 *acanth* S slender; ± 3' cor. br. r.
 3 *guier.* S ± 3' cor. br. r., y. at throat with lobes streaked with dark within
 4 *Passiflora* H U.
 5 *Tournefortia* T 15-20' fr. w. ~~streaked~~ streaked with purple
 6 *Aristolochia* H U. "penguin" flower
 7 *Passiflora* H U.
 8 *clusia?* T 15-20' pet. p., w. prox. - disc x; sty. grish. w.
 9 *Passiflora quadrangularis* H U. fr. pale orange.
 30 *Passiflora* H U. 25'
 1 *leg. "cacaranda"* T.
 2 *Alternanthera* H prostrate heads w.
 3 *Sphaeralcea* H pet. pink. blue.
 4 *Urtica* H
 5 *Oxalis* H pet. y.

Apr. 8. roadside

Trujillo

near sea level

moist places, roadside
roadsidetogether floating on surface
of stagnant water.

floating on surface, in ditch

in moist ditch

roadside

12 Botanical Garden

Lima

± 1500m.

Pl. 15

Photo.
S. 2-28, 2-29Apr. 14 ~~Chosica~~ Chosica, ornamental tree

Chosica

± 1000m.

15 ~~Chosica~~ waste places

San Bartolomé

± 1500m

Suro

- 21536 *Bidens* S. straggling, rays bright y., florets y. }
 7 *Bidens tripartita* H sta. purish. pur. striped.
 8 *Oxalis "canosa"* H rays bright y. florets y.
 9 *Peperomia* H forming scanty mats
 40 *Solanum* H ± woody at base cor. deep p. and w.
 1 *Verbena* H decumbent at base aut. y.
 2 *Eupatorium* S 3-5 cor. purish. blue., w. prox.
 3 *Erodium* H matted pet. p.
 4 *Lepidium* H matted pet. greenish. w.
 5 *Calceolaria* S 1-2' cor. pale y.
 6 *Nudubeechia* S prostrate, sep. greenish. w.
 7 grass H
 8 grass H
 9 grass H
 50 *Styrychnium* H penanth. bluish p.
 1 *Salina Relbunium* H forming dense fr. g.
 2 *Valeriana pinnatifida* H 6"-3' variable cor. cream w. to w.
 3 grass H spikelets purish.
 4 *Plantago* H cor. greenish. w.
 5 *Leptola* H 1-1½' pappus yish
 6 *Sedum* H in dense mats pet. w.
 7 *Alonsoa* H 1-3' woody at base cor. bright r., purish prox.
 8 *Hemicladys* S 2-4' stem herbaceous aut. bright y.
 9 *Aechmea* H caespitose cor. red p., hint. black
 60 *Chilanthus* H
 1 *Pityrogramme* H pet. greenish. w.
 2 *Sisymbrium* H sep. greenish. w.
 3 *Cleome* W.U. fl. grass g.
 4 *Lupinus* S 3-4' pet. blueish pur.; standard
 5 *Oxalis* H pale at center, yish. prox. within
 6 *Onocerus* H 2.5-3' pet. y., r. striped
 7 *Medicago lupulina* H decumbent rays y., florets o.y.
 8 *Eupatorium* S 3-5' pet. x.
 9 *Mammia* S 2-4' cor. & sty. pale p. to w.
 70 *Fathyrus magdalenae* H.V. pet. deep pur.
 standard pur. wings w;
 keel w., purish at apex

Apr. 15 open hillside

Rio Blanco

- 21571 *Stellaria nemorum* H. lax. pet. w.
 2 *Thalictrum* H. 1-2'
 3 *Taraxacum* H. 1-2' bracts rich pur; florets
 4 comp. (none later) H. V. long. lit. y.
 5 *Tropaeolum tuberosum* H. V. bracts pur. w. to w.
 6 *Descurainia* H. 1-2' tube long. lit. r.; green at apex;
 7 *Polypodium* H. in crevices of sepals long. lit. r.; pet. o. y.; lined with pur.; fil. deep pur.
 8 *Pellaea* H. in crevices of rock
 9 *Epilobium* H. 1" pet. p.
 88 moss in crevices of rock
 1 hepatic on rocky soil
 2 *Lupinus argenteus* S. 2.5-4' standard light blue, yellow at
 3 *Saxifraga* H. center; wings light blue, darker at apex; keel w., pur. at apex
 4 *Calceolaria "obtusata"* S. compact cor. y.
 5 *Calceolaria "uneata"* S. compact cor. y.
 6 *Medicago hispida* S. compact H. prostrate pet. y.
 7 *Isleriacium* H. florets y.
 8 *Cuscuta* H. parasitic cor. pure w.
 9 grass H.
 90 grass H.
 1 *Bidens* H. ± woody, rays y, florets
 2 *Marah* H. vine cor. gr.-w.
 3 *Taraxacum* H. Br. reddish-pur. florets y.
 4 Comp. S. 3-5' Pap. wh.
 5 grass H. florets purish
 6 *Rebunium* H. matted Br. gr.
 7 Comp. H. low Rays golden-y.
 8 *Castilleja* H. uppermost br. lgs. pur., red dist.
 9 grass H. Infl. silvery wh.
 600 *Echeveria* H. succulent
 1 ? H. succ. forming mats
 2 *Sedum* H. succ. pet. yellow-wh.
 3 *Polypodium angustifolium* H. vine in rocky crevices
 4 *Cayophora* H. vine Pet. y.
 5 *Borlesia* H. vine Pet. pinkish red, wh. in

Apr. 15 open hillside

Rio Blanco

21606	<i>Orthocarpus</i>	H	Cor. pi.
7	<i>Designichium</i>	H	Cor. pinkish
8	<i>Bartsia</i>	S 6-1'	Pt. only
9	<i>Monnina</i>	S 4-6'	Cor. ^{bright} y.
10	<i>Silene</i>	H ± 1'	Pt. deep blue
1	<i>Gentiana scarletina</i>	H	Pt. gr. black-striped
2	<i>Cheilanthes</i>	H caespit.	Pet. gr. w.
3	<i>Designichium</i>	H	Bright red, lvs. orange
4	<i>Juncooides</i>	H	
5	grass	H	Per. deep pi.
6	<i>Alousoa</i>	H	Cor. deep pi.
7	<i>Lamium</i>	H	Cor. rich pi.
8	<i>Epilobium</i>	H	Pet. rich pi.
9	<i>Verbena</i>	H forming mats	Cor. ^{pinkish blue} rich pi.
20	<i>Veronica persica</i>	H prostrate	Cor. purplish blue
1	<i>Monnina</i>	S 4-6'	Pet. deep purp.
2	Cornf.	H coarse, 3-4'	→ Rays y, petals greenish-y.
3	<i>Lobelia</i>	H coarse 2-3'	Cor. y, streaked with or. red.
4	moss	On bank	
5	<i>Loasa grandiflora</i>	H ± 3'	Pet. or-pi., scales wh., sacs pi.; fil. wh.
6	<i>Equisetum bogotense</i> HBK	H	
7	<i>Urtica</i>	H 1.5-2'	Inf. green
8	<i>Turnaria</i>	H lax	Pet. pi., purplish at apex
9	<i>Urtica</i>	H 1-2'	→ Fls. gr. wh.
30	<i>Solanum</i>	H straggling	Cor. wh., pinkish at center
1	<i>Designichium</i>	H	Per. reddish pink; anther y
2	grass	H caespitose	
3	<i>Bartsia</i>	H shrubby	Spikes silvery
4	<i>Vicia</i>	H vine	Cor. bright y
5	<i>Trifolium amabile</i>	H prostrate matted	St. & wings. One dist. wh. prox. leaf wh.
6	<i>Passiflora trifolia</i>	Vine & woody	Pet. pi.
7	<i>Gnaphalium</i>	H 1.5-2'	See notes
8	<i>Echeandra</i>	H	Heads greenish-y
9	<i>Loasa</i>	H	Per. & fil. wh. anther y.
40	<i>Lillandsia</i>	H on rocks	Pet. or-red. scales white

Apr. 15 Open hillside

Rio Blanco

rocky crevices

edge of stream

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21041	Bowlesia?	H.	Pet. w.
2	Calceolaria	S \pm 3'	Cor. bright y.
3	grass	H	
4	Geranium	H spreading	pet. rich pi.
5	Crepis	H.	Br. black; florets or. - y.
6	Salvia	H	Cor. deep blue, wh. prox.
7	Comp.	T 15-20'	Rays bright y.; florets gr. y.
8	Urticaceae	H caespit.	Per. wh.
9	Moss	On soil.	
50	Valeriana	H up to 1'	cor. grish. w.
1	Calceolaria "acnifolia"	H wood at base	pet. bright y.
2	Phacelia magellanica	H up to 1'	cor. p.; fil. grassy.
3	Lupinus "pilosus"	S 2.5-3'	standard bl.; wings bl.;
4	Calceolaria "mollis"	S 1-2.5'	keel w.
5	Antiscia "vicifolia"	S 2-3' with scandent branches	cor. bright y.
6	Calceolaria	H \pm 1' in scant soil	cor. pale y.
7	comp.	H caespitose	bracts y.; florets grish. w.
8	Saufliviera	H \pm 2' branches much elongated	inflo. deep pur.
9	Eupatorium	S 2-3'	tr. green; cor. & sty. light p. to w.
60	Pitcairnia lanuginosa	H on rocky soil. inflo. up to 4'	perianth deep pur.
1	Pitcairnia	H	per. pink (wilted)
2	Cuscuta	U parasitic	cor. w.
3	Valeriana "warburgii"	H 1-2'	inflo. rich pur.
4	Allium	H 2-2.5'	flowers deep p.
5	Nadua	H \pm 2' \pm woody at base	bracts y.
6	Cardamine	H	pet. w.
7	Euphorbia	H repent	pet. grish. } in ditch
8	grass	H	
9	grass	H	
70	Galium	H repent	
1	Epilobium	H \pm 2' woody at base	pet. rich pur.
2	Alonsoa	H \pm 1' \pm woody	cor. e.; ant. bright y.
3	Stena	H	cor. & sty. w.
4	Calceolaria "grandiflora"	S 2-4'	cor. bright y.
5	algae	in water of ditch	

April 16 Open hillside

Rio Blanco

(often planted)

21676	Calceolaria	S 2-4'	cor. bright y.
7	Eupatorium	S 2-4'	cor. & sty. w.
8	Malvastrum	S much-branched, coarse,	pet. deep bl.
9	Citharexylum	H $\frac{1}{2}$ 3'	fr. br. o. when ripe.
80	comp.	S 3-4'	
1	Chilanthes leudegera	H caespitose	
2	grass	H	
3	Nyctag.	on rocky soil.	
4	Cuscuta	H coarse 4-5'	sepals w
5	Cardamine	V Paras.	Cor. pure w
6	Calceolaria "canensis"	H	Pet. w
7	Calceolaria "pinnata"	S 3-4'	Cor. bright y
8	Lupinus	H	Cor y
9	grass	H 1-1.5'	St. bl.; wing bl. less. paler; leaf w
90	grass	H	
1	Salvia	H \pm 1'	Cor tube w, lobes bright bl
2	Byttropyron	V \pm woody	Cor wh.
3	Escalonia		Bud only
4	Stenanderson	H	Per. red, y-tipped at center within fil. light br., anther y
5	Sesymbrium	H	Pet w
6	Sesymbrinum	H	Per. y
7	grass	H	
8	Oreocera "lanata"	H 1-1.5'	Rays bright y, florets or-y, styles y; anther brown
9	Comp	S 1-2'	Rays y; florets green-y
700	Cucurbit	H	Pet. w
1	Asclepiad.	V herb.	Cor. gr., reddish purp. at center in column pi, anther w.
2	Parosela	S up to 2.5'	Pet. deep blue
3	Calceolaria	S \pm 2'	Cor y
4	Cajophora	V herb	Pet. or-r.
5	Comp.	H to 1.5 ft.	Rays wh to bl-tipped; anther y
6	Stachys	H \pm matted	Cor. pi
7	Asplenium	H	Crevice of rocks
8	Amarantus	H prostrate	Heads w
9	Urtica	H 1-1.5'	Fls. whitish
10	Loasa	H 1-2'	Pet. light r., scales green; sacs light red

Apr. 16 open hillides

Rio Blanco.

- | | | | |
|-------|--------------------------|------------------------|--|
| 21711 | Calceolaria | H 1-2', ± woody below | Cor. light y |
| 2 | Cardamine | H | Pet. w (wet ground) |
| 3 | Mimulus | H prostrate | Cor. y |
| 4 | Solanum | H 1.5-2.5' | Cor. lilac; anth. y |
| 5 | Veronica | H ± prostrate | Cor. pi., w prop |
| 6 | Moss | On bank | |
| 7 | Moss | On bank | |
| 8 | Calceolaria | S ± 3 ft | Cor. light y |
| 9 | Astragalus | S prostrate | Pet. wh., pink-tinged |
| 20 | Baccharis | S forming close mats | Infl. (young) greenish |
| 1 | grass | H | |
| 2 | Brassica | H | Pet. bright y |
| 3 | Solanum | H 6"-1' | Cor. deep pink blue; anth. y |
| 4 | Lupinus | S 3-4' | St. wings bl., but bl., y |
| 5 | Phacelia negellamiae | H to 1.5' | Cor. pi. |
| 6 | Pomarea | H 3-5'; stem wandlike | Fls. wilted |
| 7 | Lupinus | S 3-4' | Coloring as #21724 |
| 8 | Cappiflora | H vine | Pet. y; scales y, fil. wh.; anth. gr. |
| 9 | Oxalis | H prostrate | Pet. y |
| 30 | Alga | In pool | |
| 1 | Calceolaria | H elongate branch | Cor. y, red-spotted within |
| 2 | Baccharis | S 3-7' | Pappus whitish |
| 3 | Sisyrinchium | H | Per. deep pi. |
| 4 | Mammillaria | H | |
| 5 | Plagiobotrys | H | Cor. w |
| 6 | Calceolaria "multiflora" | S 2-4' | Cor. y. |
| 7 | Halimia | H | cor. pinkish y. |
| 8 | Centraia | H with ± prostrate | cor. w. pinkish y. prox. pink-stipped towards one margin |
| 9 | Astragalus | S. branches | Pet. cream w. |
| 40 | moss | on rocky soil | |
| 1 | Comp. | H | br. g. per. at apex |
| 2 | Peperomia | H in crevices of rocks | flowers pinkish y. |
| 3 | Mammillaria | H on rocky slope | |
| 4 | Valeriana | H 2-2.5' | cor. cream w.; stem r. |
| 5 | Polylepis | T. 12-15' | |

Apr. 16 Open hillsides

Rio Blanco

rocky bank
 St. blue, y. center within, wings bl., ~~beel~~ pi. purple at tip

55-16 Photo

21746 *Sambucus* (cultivated)

30-40'

cor

pet. var. w.

7 *Baccharis*

S. 1.5-2' fls. w.; ant. gray y.

8 *Malvastrum*

H. coarse, 2-3' pet. p.

9 *Lygodium*

H. ± woody below fr. gray y. (immature)

50 *Senecio*

S. 4-5' fls. golden y.

1 *Solanum*

H. ± 2' fr. g. (immature)

2 *Solanum*

S. 2-5' branches cor. lavender, ant. y.

3 *Thalictrum*

S. much elongated

4 *Verbena*

H. 2-4'

5 *Cajuput*

H. prostrate forming cor. black pur.

6 algae

H. erect, forming cor. black pur.

7 *Solanum*

H. V. growing as stone in running water

8 *Senecio*

S. 2-4' cor. bl.; ant. w.

9 *Oenothera*

S. lax fr. g. (immature)

60 *Salvia*

H. 1-1.5' ± woody pet. o.r.; ant. y.

1 *Lymanthus*

H. at base cor. bl.-pale pur.

2 *Gentiana*

H. 1-2' pet. w.

3 *Isotria*

H. in marshes cor. w., p. tinged

4 algae

H. soil

5 *Myriophyllum*

completely submerged

6 *Bidens*

in pool - very young

7 grass

floating in quiet water of pool

8 *Stenia*

in pool

9 *Senecio*

H. 1-2' rays br. y.; fls. gray y.; ant. black.

70 *Oenothera tarqueensis*

1 grass

H. ± 2' br. g. present at cor. tube pur.

2 *Gentiana*

H. stems lax, pet. w.

3 *Hydrocotyle*

H. 1-2' l. pet. o.r.

4 *Tropaeolum* "pajaro"

H. flowers y., pet. r. - spotted pur. in.

5 *Schinus molle*

H. V. flowers y., pet. r. - spotted pur. in.

6 *Soraria*

S. 2-5' stem + wings pale bl.; keel w.

7 *apoc.*

S. pur. at apex.

8 *Allionia*

H. V. fr. only.

9 *Malvastrum*

H. lax, viscons cor. pink. bl.

80 *Tecoma*

H. w. elongated pet. pink pur., w. at base

H. 2-4' ant. y., cor. bl. y., faintly striped

H. 1. 15-20' cor. bl. y., faintly striped

with o. within.

Apr. 16 Open hillside

Rio Blanco

17

Photo
S 5-21

on dry soil
on moist bank
20 in moist ditches
shrubby hillside
open hillside

Empalme

Tanna

- 21781 *Urtica*
 2 *Malache*
 3 *Liabum*
 4 *Ruta graveolens*
 5 *Tillandsia usneoides*
 6 *Bystropogon*
 7 *Solanum*
 8 grass
 9 *Salvia*
 90 *Parosela*
 1 *Solanum*
 2 comp.
 3 *Eragrostis*
 4 *Attemanthera*
 5 *Liabum*
 6 *Cheilanthes lundigeri*
 7 *Echeandra*
 8 *Gaya (?)*
 9 *Arctophyllum*
 800 *Sporobolus*
 1 *Sisyrinchium*
 2 grass
 3 *Tillandsia*
 4 *Salvia*
 5 *Galinsoga*
 6 *Pitcairnia*
 7 *Cheilanthes*
 8 *Notholaena baranensis*
 9 *Notholaena*
 10 *Polycarpha*
 1 *Cassia*
 2 *Ptyrogramma*
 3 *Oxalis*
 4 *Commelina*
 5 *Boussingaultia*

- H
 H_{1-2'} pet. pale p.
 H_{1-2'} ray & florets y.
 H coarse, pet. y.
 E.H. on dead
 W.V. ting cor. w.
 S. 3-6' cor. w., ant. y.
 H 3-4'
 S 1.5-2' cor. br. o. r.
 H ± woody stem. w.; unis. and keel not per.
 H branches elongate
 S 2-4' cor. pale bl.; ant. y.
 S 3-4' rays & florets y.
 S leaves very visous
 H semi- heads deep p.
 H prostrate 1.5-2' woody rays & florets br. y.
 H at base
 H in rocky crevices per. + fil. w.; ant. y.
 H 2-3' pet. o. y.
 H ± woody
 S 1-2' cor. w.
 H U. cor. w. procr., pist. pur. dist.
 H
 H in crevices of rocks
 H rock
 H ± 1' cor. tube w., lobes bl.
 H ± 1' ray w., florets y.
 H terminal per. grass g.; fil. wh.
 H with gr., styles & stigmas green
 H
 H
 H in dense
 H clumps
 S in low, 1-2' high, branches spreading
 H
 H pet. y.
 H ± 2' per. dark. bl.
 H
 H U. buds pur.; pet. w., ligulines

Apr. 20 open hillside

Tanna

- 21816 *Ephedra* S. 1-3' scales g., y. at margins; ant. w.
 7 *Pellaea tenuata* H. 2-4' in clefts fr. g., tinged with pur.
 8 *Lodonea* S. of bare rock
 9 *Cyperus* H. in clefts of bare rock
 20 *Eupatorium* S. 2-3' buds green.
 1 *Cyperus* H. in clefts of bare rock
 2 grass H. 3-5'
 3 *Bidens* S. straggling, rays y. florets y.
 4 *Ipomoea* H. U. cor. p. prox., pur. dist.
 5 *Serardia* H. woody at base cor. p. without, w. within
 6 *Parosela* S. low, stan. w., deep pur. at lower margin; unisp. & keel deep pur.
 7 *Cuscuta* U. parviflora cor. rich pur.; ant. y.
 8 *Guaphalium* H. ± 1', woody buds silvery y.
 9 *Eupatorium* H. below S. 2-4' tube cor. g., lobes green. w.; sty. w.
 20 *Alternanthera* H. matted
 1 *Campoph.* H.
 2 *Polypodium* H.
 3 *Eupatorium* S. up to 1' cor. & sty. w.
 4 *Salvia satucina* S. 2-4'
 5 *Allionia* H. to 3 ft. cor. pinkish-or.
 6 *Oralis* H. succulent Pet. y.
 7 *Salvia* S. 1-2' bright or. - red; pubescent
 8 *Salvia* S. 1-1.5' cor. w. at base, or cor. y.
 9 *Iris* H. 1.5-2' Cor. pi., wh. at base
 40 grass H. Per. bright y, purple-tinged within pro.
 1 *Bidens* H. Rays y; cor. tube gr.-y, lobes y
 2 *Stenandrium* H. cor. pi.
 3 *Cuscuta* H. par. Cor. green-y
 4 *Guaphalium* H. ± 1.5 ft. Heads ~~gr.~~ gr.-w.
 5 *Alternanthera* H. matted Heads w.
 6 *Mutisia* S. scandent bush Rays bright y
 7 *Echeveria* H. succ. Pet. or.-red
 8 *Sedum?* H. matted Pet. or.
 9 *Solanaceae* S. pinnate fr. gr.-y.
 50 ? S. low 1-6' fls. rich pi.

Apr. 20 Open hillside

Tarma

21851 grass

2 *Caesalpinia*3 *Bidens*4 *Allionia*5 *Verbena*6 *Opuntia*

7 grass

8 *Cuscuta*9 *Alousoa*60 *Alternanthera ficoidea*1 *Eupatorium*2 *Solanum*3 *Agave*4 *Rumex*5 *Calceolaria*6 *Bascharia*7 *Veronica*8 *Passiflora molissima* "tumbo"9 *Marrubium vulgare*70 *Eucalyptus globulus*1 *Solanum*

2 lichen

3 lichen

4 lichen

5 lichen

6 lichen

7 moss

8 *Convolvulus*9 *Brodiaea*80 *Atriplex*1 *Solanum pinnatum*2 *Conium*3 *Oenothera "chilensis"*

4 comp.

5 *Poggenhoffia*

H

Tree 20-25' or
smaller at base at

H to 2'

H pruned branches

H pruned branches

succ. up to

H

H parasitic

H up to 3'

S ± 4 ft.

S with elong.

2-3' br.

H flowering stem

H up to 2.5'

H up to 2.5'

H with branches

H 1-1.5'

S ± 3'

H with decumbent

H br.

V ± woody

H up to 3'

T up to 100 ft

H about 20 ft

H viscous

as dry rocks

on rocky soil

on dry rocks

on dry bank

" " "

an moist bank

H, U.

H coarse

H 1-2'

H 2-5'

S branches

S herbaceous, 2-4'

S 2-3'

U. ± woody

Pet. y

Recept. y; florets gr. - y

Pet. blunt - purpl.

Cor. light blue

Pet. orange - r.

Cor. gr. - wh.

Cor. o. - r., anthers y

Cor. pale bl., anthers y

Cor. pale y.

Infl. gr. - w.

Cor. light blue

See notes

Cor. wh.

Fr. only

Cor. wh., anthers y.

as dry rocks

on rocky soil

on dry rocks

on dry bank

" " "

an moist bank

H, U.

H coarse

H 1-2'

H 2-5'

S branches

S herbaceous, 2-4'

S 2-3'

U. ± woody

see notes

see notes

see notes

see notes

see notes

see notes

see notes

see notes

see notes

Apr. 20 Open hillsides

Tarma

Photo S6-3

along shaded stream bank

Lvs up to 2.5' l., 1/2' w.

A54

Photo S6-6

planted along roads

o.h.

along shaded stream bank

21 thickets

in moist ditches

Tarma

open hillsides

S6-5 Photo

- 21886 *Cassia* T 12-15' pet. + ant. y.
 7 *Opuntia* ["tuna"] 3-4' h. pet. o.r.; sta. light y.
 8 *Cary.* S 2-4' rays y.; cor. + sty. greenish y.
 9 *Opuntia* H 5-1.5' pet. red p.; fil. w.; cent. g.
 90 *Spartium junceum* "retama" S 3-6' pet. br. y.; fil. pale y.; ant. brownish
 1 *Salvia* S 1-2' cor. br. o.r. with golden pubescence
 2 *Buddleia* T 10-15' without cor. o.y.
 3 *Cary.* S 2-4' with rays br. y.; ~~sta.~~ cor. tube
 4 *Adesmia* H elongate bran. g. pale y.; lobes y.
 5 *Alonsoa* S 2-3' pet. y.; sta. red-streaked.
 6 *Argemone mexicana* L. H 1-2' cor. pale pink. o.; ant. y.
 7 *Prunus copulina* T 30-50' pet. pale y.; ant. br. y.
 8 *Eleagnus* T 30-40' pet. w.; fr. r. when ripe
 9 *Polylepis* T 20-30' pet. greenish w.
 900 *Oxalis* H pet. y., faintly r. striped in.
 1 *Salicornia aperiens* H V with elong. cor. light y., r. blotched at base
 2 *Saracha* H gate bran. ant. deep p.
 3 *Calceolaria* H cor. pale y.
 4 *Ranunculus* H pet. and ant. br. y.
 5 *Cuscuta* V. parasitic cor. w., sometimes g.-tinged
 6 *Luffa* H V cor. y.
 7 *Chenopodium* H 1-2' sep. deep p.
 8 *Lycopodium* H
 9 *Cuscuta* V. parasitic cor. w., tinged w. pur.
 10 *Eugenia (?)* T 20-30' pet. + sta. fil. w.; ant. g.
 1 *Cary.* H 3-4' woody rays br. y.; ~~sta.~~ cor. tube
 2 *Solanum* H below g. pale y.; lobes g.; ant. purish.
 3 *Tropaeolum* S 2-4' bran. cor. pale bl., ant. y.
 4 *Snaphalium* H V sep. + pet. br. r.
 5 *umbel.* H 2-3.5' heads silvery y.
 6 *grass?* H 2-3' pet. w.
 7 *Oxalis* growing submerged in pet. y., r. striped prox.
 8 *Soralia* H 4-5' bracts purish
 9 *Change 21886 + note that Prunus* S 4-5' pet. bluish pur.
 20 *Tournefortia* "sauce" S ± 8' cor. tube green out o.in, limb w

Apr. 21 open hillside

Tanua

Photo
56-7
Photo
56-8, 56-11

KA-58 Photo

along stream

Oth. "
open hillside
22 In patio

- 21921 Ipomoea V Herb Cor pinkish-purple, pale prox. Apr. 22 Open hillsides. Tanna
- 2 moss On rocky soil
- 3 hep. " " "
- 4 Plumbago caerulea H lax br. Cor. tube purple, lobes bright blue
- 5 Verbena H erect, up to 3' Cor. pinkish-w.
- 6 Amaranthus H coars. 2-2.5' Sep. deep pi., anthers gr.
- 7 Nicotiana glauca H coars. 3' Tube y-gr., lobes grass-gr.
- 8 Salvia H woody, below 2' Cor. pi., with yish hairs
- 9 grass H
- 30 grass H
- 1 grass H
- 2 grass H
- 3 Valeriana H to 2' St. reddish br.; cor. cream wh.
- 4 lichen On rocky bank
- 5 Euphorbia H Fl. y-g.
- 6 Alternanthera H with lax br. Sep. deep purple
- 7 Passiflora V ± woody St. gr.-wh, deep fl. at margin at base; w. o. k. deep blue
- 8 Passiflora pruinatistipula V ± woody See notes
- 9 Cucurbita V herb. Cor. wh.
- 40 Tillandsia H on rocks
- 1 Salvia H 1.5-2', woody Cor. bright red, pink pi., anthers g.
- 2 Passiflora mollissima "tumbo" V ± woody Fr. green
- 3 Passiflora obtusiloba V herb. See notes
- 4 Salix T 40-60'
- 5 Werneria H caesp. Ray w, yish at base; florets y and stip. gr.
- 6 Psoralea S 3-5' Pet. bl. dist., wh. prox.
- 7 Passiflora tiliifolia? Fr. (only) or-gr.
- 8 Juncoides H Caespitose pet. pale pur., white prox.
- 9 Motrotriche H forming fil. g.; anthers y.
- 50 Agrostis H clumps
- 1 grass H
- 2 Gnaphalium H densely br. pink pur.; pap. w.
- 3 Cerastium H matted sep. yish-g.
- 4 comp. H densely florets green-w.; pap. w.
- 5 Arctostaphylos umbell. H densely Cor. w., sometimes p.-tinged

Thickets
Open hillsides

~~Along stream~~
Thickets Thicket

Along stream

Open hillsides
market

24 puma between Tanna + Janja

Photo
56-15

± 4500m

- 21956 *Bartia* H caespitose cor. br. y.
 7 *Plantago* H in dense cor. w.
 8 comp. H mats rays w.; ~~fl. white~~ gny
 9 sax. H in dense cor. tube gnyish w., lobes pur.; ant. y.
 60 *Centropogon* H mats sup. pale y.; pet. w.; purple sh.
 1 *Werneria "flava"* H in dense cor. pink.
 2 *Gnaphalium* H mats rays br. y.; sep. w.; cor. tube white to y.; lobes y.; sty. y.
 3 *Bromus (?)* H cor. pink. pur.
 4 *Sisyrinchium* H per. y.
 5 *Hypocinchus* H pet. y.
 6 *Centropogon* H cor. without pink dist. gnyish. y. prox. striped with
 7 *Calceolaria "uniflora"* H cor. y., lower lip r.-spotted m. same, stripe fainter
 8 *Geranium "argenteum"* H caespitose pet. w.
 9 *Werneria "alba"* H rays w.; florets y.
 70 *Ruellium* H fr. g.
 1 *Geranium "palustre"* H caespitose pet. w., p. striped
 2 *Trifolium* H caespitose pet. light p.
 3 *Castilleja* H bracts w. or gnyish prox. r. dist
 4 *Plantago* H cor. deep p.
 5 *Senecio* H much-branched rays br. y.; fl. gnyish. y.
 6 *Heliconia* S 5-7' woody at base cor. deep. blue.
 7 *Monnina* S + 3' ant. wh. to y.
 8 *Alauca* H woody pet. br. bl.
 9 *Calceolaria "virgata"* H below cor. o.r.; ant. y.
 80 *Calceolaria "crenata"* S with pedicel. cor. y.
 1 *Cucurbita* S branches 2-4' cor. y.
 2 *Salvia* H U. cor. w.
 3 *Cassia* H 1-2.5' cor. deep bl.
 4 *Cuscuta* S 1-6' pet. y.
 5 *Calceolaria* S P. cor. pink. w.
 6 *Eriochloa* H succ. cor. br. y.
 7 *Bromus* H sub-erect cor. y.
 8 *Calceolaria "pinnata"* H in dense rays w.; florets gnyish. g.;
 9 *Engelmannia* H mats cor. tube gnyish w.; lobes & sty.
 90 *Eupatorium* S 3-6' lavender to light p.

Apr. 24 puma between Tanna + Jauja

+4500

25 ~~thicket~~ ^{rocky} along stream bed Ocopa

Photo
56-28
Photo
56-27

Photo
56-29

- 21991 Cardamine
2 moss.
3 Eupatorium
4 Texana
5 Juncus
6 alga
7 Salvinia
8 Epilobium
9 grass
- 22000 Paspalum
1 moss
2 Solanum
3 grass
4 Oxalis
5 Phytolacca
6 moss.
7 Soralia
8 Alnus ["aliso"]
9 Salvia "sagittifolia"
10 Cantua brevifolia
1 Passiflora mollissima
2 Passiflora pinnatifida
3 Lupinus cactus. tall herb
4 Lupinus (cultivated)
5 Salvia
6 Rosaceae?
7 Alternanthera
8 Convolvulus
9 Andropogon
20 grass
1 grass
2 Arctostaphylos
3 Manisotys
4 grass
5 Bouteloua
- H. ^{sub pro-} abundant
at dry soil
S. 2-4'
S. 2-4'
H.
growing on rocks in swift-
flowing stream cor. bluish-p.
H. matted
H. 1-2'. pet. p., deeper tint.
H.
H.
on moist bank
S. 3-5' with cor. lavender; ant. y.
S. erect br.
H. succ.
H.
H.
on dry bank.
S. 5-7' pet. fl.; paler prox.
T. 20-40'
3-5' very
H. viscos
S. 4-60'
W. U.
U. U.
H.
H. ± 3'
H. ± woody
1-1.5'
S. much-grained
H. 5-1.5'
H. matted
N
N
N
S L, up to
H. ^{taproot, lvs} flat on ground
H.
N ^{pustulate}
- pet. w.
tube
cor. grayish w.; lobes &
sty. w.
br. brown, pale at margin;
filaments w.
pet. p., deeper tint.
pet. y.
sep. deep p.
pet. fl.; paler prox.
cor. & ant. br. bl.; fil. paler.
cor. tube br. r. lobes ting. with
sty. w. prox. dist. & stig. deep pur.
- standard bluish-p., v. at center.
wrings deep bl.; keel w.
Cor. ter. r.
Sep. deep pi.; pet. paler.
heads gr.-w
Cor. wh. ^{pi.} day-g. prox.
- Cor. wh., gr. at base

Gr. 25 along rocky stream bed,

Осра.

Photo
86-30

thickets

24 *grua* between Tanna & Janja
25 *San Gerónimo*
26 *Pilcomayo*, near *Huancayo* ^{*open hillsides*}

Photo
56-31
Photo
56-32
Photo
+ 4000 in

A62 - Photo

~~#2~~ 3300 m.

- 22026 9 *Pomoea* V Cor. rich pi., po. - mm
 7 *Anthericum* H Per. y
 8 *Parosela* H^L, branches pr. wh. Pet. blue
 9 moss On soil
 30 *Colletia* S 2-3' very fr. gr.
 1 *Rascharis* S matted pappus wh.
 2 *Gentiana* H Cor. wh., 2-4 prox. purple
 3 *Ephedra* Plant matted on ground Fr. light red.
 4 *Passiflora pinnatifida* V woody Sep. pi. rays lavender
 5 *Solanum* S 2', much fr., fr. green Cor. pi. with blue; anthers y
 6 Moss Dry bank
 7 *Potamogeton* H^L floating bank
 8 *Plantago* H Cor. pi.
 9 *Polystichum* H fr. br. r.; rays & fl. y.
 40 *Hieracium* H fls. greenish w.
 1 *Caryoph.* H forming mat stem. bl. prox. paler dist.;
 2 *Astragalus* H matted unisp. bl.; keel deep bl.
 3 *Loeba* H forming compact masses
 4 *Bromus* H
 5 *Bartea* H cor. pink. bl.
 6 *Gentiana* H cor. tube yish, gr. without, w. in;
 7 *Loasa* H 1-2' in shade lobes bl. bl.
 8 *Gentiana* H of rocks set, scales, & fl. o.c.; ant. greenish.
 9 *Gentiana* H cor. tube greenish w. ant. w. in;
 50 *Lixistichia* H lobes rich p., fil. w. ant. y., pro. till greenish g.
 1 *Valeriana "filicina"* H cor. tube yellow, but, greenish w. in, lobes deep fl. on one side out, - slay blue in.
 2 grass H
 3 *Elaphoglossum* H in shade of cor. greenish w.
 4 moss H in shade of aures w.
 5 moss on moist soil
 6 lichen in tufts on rocks
 7 alga on turgis
 8 *Asplenium* H in standing water, shallow pools
 9 *Cerastium "lanuginosa"* H in shade of rocks
 60 *Arcytophyllum* H matted cor. w.

Apr 26 Open rocky hillsides, Pilcamayo, ^{3300 m.} near Huancayo

on one side without

Thickets
edge of woods
open rocky hillside

In stream

Dry & wet banks

27 ~~growing at the base of~~ Mt. La Justay, near Huancayo

22096 Bromus

7 grass

8 grass

9 Werneria

100 Calceolaria

1 Gentiana

2 Galium

3 Gentiana

4 comp.

5 Draba

6 comp. (?)

7 Frankenia (?)

8 Bartia

9 Gnaphalium

10 Lupinus

1 Senecio

2 lichen

3 Alchemilla

4 Lycopodium

5 comp.

6 Werneria

7 grass

8 Urtica flabellata

9 Nototricho

20 Werneria

1 Gentiana

2 Cactus

3 Astragalus

4 Verbena

5 Thalictrum

6 Calceolaria

7 Polystichum

8 Valeriana

9 Polypodium

30 Saxifraga

H

H

H

H

H

H

H matted

H capitata

H matted

H forming dense

H mats

H forming dense

H mats

H

H

H

H

H

H

H

H

H

H

H

H

H

H

H

H

H

H

H

H

H

rays black p., florets: tubes w.,
lobes p.-tinged, sty. deep pur.
cor. lobes, r-dotted at base in
cor. tube green w., lobes pale p.

pet. y, striped with O.R. on one
side without.
florets greenish, buds y.

cor. br. y.

cyllo. green w.

stan. w., wings & keel pur.,
w. at base
florets y.

ray w., sty. g.

Rays y; florets gr. y.

Cor. w., y.-tinged petals.

Pet. pinkish purple, st. striped
with deep pink-purple.

Cor. rich purple.

Fr. only

Cor. bright y

Cor. w.

Pet. w

Apr. 27 p.m., Mnt. La Juntay, near Huancayo.

Open hillsides

Ucayalco Valley, near Huancayo

A-71 Pl. 15

Rocky open bank

- 22131 Comp. H up to 2' + woody
 2 Cerastium H Low
 3 Calceolaria H ± woody below
 4 Cerastium H elongate lax
 5 Chuquiragua S much branched up to 4'
 6 Lupinus H ± woody below
 7 Bromelia H ter. Basal lvs. scarcely larger than in species
 8 Bartsia H slender erect branches
 9 Lupinus H to 2.5'
 40 Salvia H to 3'
 1 Alousoa H ± woody to 2.5'
 2 Verbena H
 3 Calceolaria viscosa S 1-2.5'
 4 Calceolaria cordata S 1-4'
 5 Linum H ± woody at base
 6 Relbunium V. matted
 7 Bystropogon "matta" S up to 4'
 8 Eupatorium "chilica" S 3-5', leaves used to wax violin bows.
 9 Comp(?) "lengua de perro" H leaves used on one side to soften wound, on other side to dry out wound.
 50 Eupatorium "maruquilla" S ± 3' used in cooking for flavoring.
 1 Gentiana H
 2 Monarda H low
 3 Calceolaria S 3-5'
 4 Eupatorium S much-branched
 5 Satureia S up to 3'
 6 Astragalus H 1-1.5' ± woody at base
 7 Asplenium H in crevices of bare rock
 8 Stena H
 9 Ipomoea H V. copiose
 40 Comp. H up to 5'
 1 Pityrogramma H in crevices of bare rock
 2 Pellaea H 3-5'
 3 Eupatorium S up to 1' ±
 4 Calceolaria H woody below
 5 Calceolaria H ± 6" on bare rock

Flowers purplish (withered)

Pet. wh.

Cor. y.

Pet. wh.

Bracts red to or-red.

St. purplish blue, wh. hairs in; w. o. t. -

Cor. bright y.

St. purplish blue, y at center wings pink, head black, deep purple apex

Cor. deep bl.

Cor. or-r.

Cor. deep bl.

Cor. bright y.; fl. very viscous

Cor. bright y.; stems purplish

Pet. y.

Cor. gnath. w.

Cor. w.

Cor. tube yellow, g. ant. gnath. w. in; lobes p. to pinkish.

Pet. deep bl.

Cor. y.

Cor. gnath. w.; lobes & sty. deep p.

Cor. light r.

Pet. cor. w., p. - ting.

Fls. to pink. w.

Cor. pink, pur. dist., w. prox.

rays w.; cor. tube deep gr., lobes gnath. w.

sty. w.

Cor. br. y.

Cor. br. y.

Apr 27 Open rocky banks, Acapaleo Valley, near Huancayo

Open hillsides

Open rocky banks

Open hillsides

Pilcomayo

29 rocky Open hillsides. bet. Viques & Ingakurasi ± 3150 m. Montano Cañon, south of Huancayo

- 22166 *Guaphalium* H woody at base, in infl. greenish-w.
 7 *Plen* H crevices of bare rock
 8 *Alausa* S in crevices of bare rock cor. o.r.; ant. br. y.
 9 *Alternanthera* H woody at base, with infl. deep pur.
 70 *Asplenium* aff. *praevenum* H tangled branches
 1 *Isopappus* S up to 2' bracts black; rays & florets y.
 2 *Baccharis* S up to 3' with florets greenish.
 3 *Phrygilanthus* S compact crown cor. yish-g, lobes r.; ant. & stig. y.
 4 *Satureia* S 1-2' cor. dull p. without, y. within, p-spotted.
 5 *Momina* S 5-7' pet. deep bl.
 6 *Citharoxylon* S much branched, cor. tube greenish w, lobes greenish-w.
 7 *Passiflora gracilis* S up to 5' calyx tube p, gr. prox. out, bluish g. in.; sep. & pet. p.; operc. w.
 8 *Passiflora tripartita* W.U.
 9 *Eupatorium* S $\pm 4'$ cor. tube greenish-w., lobes & sty. p.
 80 *Parosela* H 1-2' woody
 1 *Citrus* T 10-12' fls. wh., fr. ± 7 in. diam.
 2 ? S $\pm 6'$ Cor. cream w., anther y
 3 *Berberis* S 4-7' along fr. bl.
 4 *Valeriana* H up to 6' Cor. gr. w
 5 *Cajophora* V N Pet. red; scales y-g
 6 *Puccinellium* S 10-12' reddish pur. green tinge
 7 *Barnadesia* S 8-12' Cor. & mottled out.
 8 *Escallonia* T $\pm 15'$ fls. deep pi.
 9 *Calceolaria* H \pm woody fr. only
 90 *Werneria* H 1-2' Cor. y
 1 *Comp.* H lvs flat on ground infl. y
 2 *Guaphalium* H lvs flat on ground infl. y
 3 *Lentiana* H \pm woody, forming small tufts infl. gr.-w.
 4 *Comp.* N Cor. w, gr-tipped & striped out, infl. pale blue
 5 *Agrostis* N Ray w, florets gr.-y.
 6 *Bidens* H Ray bright y, fl. gr.-y
 7 *Nototricho* N Pet. pi. bl.
 8 *Crastium* N Infl. gr. wh
 9 *Comp.* N Ray w, fl. gr.-y
 200 *Lepidium* H fr. only

Apr. 29 Open rocky hillside between Uqris & Higachuari ± 3150 m.
 Montano Canon, South of Huancayo

thickets

30

May 1 Cultivated
 2 Thickets

3

Open hillsides
 Puna

± 4150 m. Hac. Cuyucacha - Pangoza

in Montano valley, below ± 2500 m.
 Anco, La Melchorada

Huanta ± 2800 m. A-84
 Between Huanta & Hac. Cuyucacha ± 3000 m.

± 3700 m. Hacienda Cuyucacha
 B-9 Photo (with 23313)

Photo
 59-24

purp.-dotted in

22201	Scirpus <i>Scirpus</i>	H	Per. y
2	<i>Oenothera</i>	H	Pet. y
3	<i>Scirpus</i>	H	
4	<i>Stenolophus</i>	H	Per. y-g, purpl. tinged
5	<i>Saxifraga</i>	H	Pet. wh.
6	<i>Plantago</i>	H forming dense firm mats	Cor. gr. w, pink w., anthers g.
7	<i>Geranium</i>	H	infl. purplish
8	<i>Gentiana</i>	H	Cor. wh., pink-tinged
9	<i>Scirpus</i>	H	Per. blue
10	<i>Calceolaria</i>	H low	Cor. y
1	<i>Acaena</i>	S matted, stem repent	fr. only
2	<i>Fagopyrum</i>	H	infl. gr. y.
3	<i>Geranium</i>	H woody, rootstock, elong. br.	pet. pi-w.
4	<i>Geranium</i>	H elong. br.	Pet. pure wh.
5	<i>Paspalum</i>	H	
6	<i>Quia</i>	H in small clumps	
7	<i>Lobelia</i>	H	Cor. bright bl.
8	<i>Lichen</i>		
9	<i>Parusela</i>	H on rocky bank, woody at base, br. elong.	Pet. deep bl.
20	<i>Tridax</i>	H to 3' in dense clumps	Per. wh.
1	<i>Gentiana</i>	H	Cor. sky-bl.
2	<i>Calceolaria</i>	H 4' woody up to 1.5'	Cor. light y
3	<i>Cypripedium</i>	H 4' woody	1 pet. pi, anthers bl. tinged?
4	<i>Alchemilla</i>	H repent	infl. greenish.
5	<i>Oxalis</i>	H succ.	pet. y.
6	<i>Chilanthium</i>	H	
7	<i>Selaginella</i>	H in shaded rock	
8	moss	on boulders	
9	<i>Hepatic</i>		
20	<i>Hypoxis</i>	H 4' woody	pet. y.
1	<i>Comp</i>	H up to 2'	ray to x. florets greenish, leaves used to make tea, cor. tube, lobes sky. w.
2	<i>Stena</i>		pet. blue, p. ting.
3	<i>Lupinus</i>	H	
4	<i>Chilanthium myrsophyllum</i>	H crevices of rocks	
5	<i>Lycopodium</i>	H	

May 3 Puna

± 4150 m *Har. Cusquechuana* - *Pangora*

wet soil

4 Open hillside
Puna

± 4400

± 4530 m.

± 4200

Open hillside

± 3900

Pampa - *Pampa*

± 3200

- 22336 lichen on rocky banks
 7 lichen
 8 Gentiana H cor. ^{to pink.} w. ^{lobes} striped on one side without.
 9 Cordia cylindrostachya S 5-8 much-branched cor. pink g.; succate at anag.
 40 Alaucoa H 2-3' woody at base cor. o.r.; ant. y.
 1 Bythopogon H 2-3' cor. w.
 2 grass H 1-3'
 3 Solanum H 2-5' cor. pale violet; ant. y.
 4 Heliotropium penuratum S 2-5' cor. pink. blue.
 5 Salvia H 1-2' cor. deep. blue
 6 Gentiana H 7-9' with S. elong. bran. ~~cor. pale violet~~ cor. tube whitish, lobes pale violet rays y; fls. gish y
 7 comp. H 1-2' infl. yish g.
 8 Siegesbeckia S 1-2' cor. light y
 9 Calceolaria S 4-6' pappus gish. w.
 50 Eupatorium S 3-6' cor. br. y.
 1 Calceolaria S 2-4' cor. o.r.
 2 Alaucoa H 2-4' cor. p.
 3 Stachys H succ.
 4 Polystichum H
 5 Oxalis H
 6 Notholaena bonariensis H weak cor. y.
 7 Calceolaria H sub-erect
 8 Lamodium H
 9 grass H lax, sub-erect - pet. gish. w.
 40 Bonelia H subcaudant
 1 Galium H 1-3' woody cor. deep rich p.; lower lvs. g.
 2 Stachys H at base at apex
 3 Polypodium H in crevices of rocks
 4 Peperonia H subcaudant pet. blue to deep blue
 5 Miconia H
 6 lichen on sandy soil
 7 Pellaea H matted
 8 Polyrhiza H coarse, 4-7' rays y; fls. gish y.
 9 Tomelbaoutia S 6-8' branched at base } cor. gish. ant, lobes w. in.
 70 Peperonia H ter.

May 5 open hillsides ± 3200 m. ~~Pampa~~ Pampalea

(Pampalea ~~Jangle~~)

± 3000 m.

Carrapa

- | No. | Plant Name | Height | Other Notes |
|-------|---|----------------------------------|---|
| 22271 | <i>Stryopteris</i> | up to 4' | pet. l. purple, ant. w. to y. |
| 2 | <i>Brachyotum</i> | S. common at this alt. | cor. w. to pale p. prox; deep p. dist. |
| 3 | <i>Convolvulus</i> | H. V. | |
| 4 | <i>Lichen</i> | on rocky soil | |
| 5 | <i>Solanum</i> | S. 5-7' | cor cream w.; ant y. |
| 6 | <i>Diplazium</i> | H | |
| 7 | <i>Oxalis</i> | H | |
| 8 | <i>Dystrochopogon</i> | S. with elong. bran. | cor. pale p. ant, bl.-ting. in. |
| 9 | <i>Cuscutarium</i> | S. 4-6' | cont. tube grish w.; lobes bl. to pur., pappus cream; stig. bl.; pale cor. r. p. ant, whitish in; fil. w; ant. brown. |
| 80 | <i>Fuchsia</i> | S. 5-7', with depend. bran. | stan. l. bl. at margin at center, wing l. bl.; keel w, green dist. |
| 1 | <i>Lupinus</i> (cultivated) | H. base, 2-3' | |
| 2 | <i>Claphoglossum</i> | H | |
| 3 | <i>grass</i> | H | |
| 4 | <i>Claph.</i> | H | |
| 5 | <i>Rubus</i> | S. with elong. bran. | pet. p, pale prox.; fil. w.; ant. y. |
| 6 | <i>Phoradendron</i> | S. parasitic on a | leaves y. g. |
| 7 | <i>Crotar</i> | S. or small T. | pet. w. |
| 8 | <i>Steris</i> | S. 5-12', 2-2.5', 1 | cont. tube pur., grish prox, lobes sty. w. |
| 9 | <i>comp.</i> | H. woody, coarse, 14' | ray w. g. stiped; florets grish. w. |
| 40 | <i>Malaxis</i> | H. terr. | per: large segment g. pur. dotted; smaller seg. deep pur.; column y. cr. w. |
| 1 | <i>Gaultheria</i> | S. slender, 3-6' | |
| 2 | <i>Escallonia</i> | T. 12-15' | buds cr. w. |
| 3 | <i>Lycopodium</i> | H | |
| 4 | <i>Stelis</i> | H. ter. epiph. | fr. only. |
| 5 | <i>Arenaria</i> | H. lax | pet. w. |
| 6 | <i>Engelmannia</i> | S. parasitic(?) | infl. l. y. throughout |
| 7 | <i>Cavendishia</i> | S. 5-7' | cal. g.; cont. tube dull r., lobes white; fil. w., ant brownish y. |
| 8 | <i>vacc.</i> | S. 3-4' | buds l. p. - fruit deep blue |
| 9 | <i>Manocharactum</i> | S. woody at base, 2-2.5' | |
| 300 | <i>Cracca</i> no "cuba" "mexicana" | S. 3-5', this spec. 1st year old | |
| 1 | <i>Clusia</i> | T. 15-20' | |
| 2 | <i>Lomatia</i> | S. 9-12', with erect | peduncle & per. & style ricop. |
| 3 | <i>Phenax</i> | S. central stem much bran. | |
| 4 | <i>Tirantia</i> | S. or low T. 10-12' | per. l. bl. |
| 5 | <i>Alutela</i> | H. up to 3' | pet. cream color |

May 5 open hillsides

± 2000 m. (~~Rauvales~~ ~~Humaya~~ ^{Carrapa})

1890.

bluish w. at apex; ^{wooded banks}
open hillside
a. l.

± 2800 m.

wooded banks

± 2500 m.

7 ~~at~~ clearing ± 800 m. *Alia* Ph. A-87
5 wooded banks ± 2500 m. (*Prunella* - *Jarapa*) CC

~~woods~~ thickets along river. ± 2200 m. (~~near Cano~~) ~~Hampton~~

- 22306 Solanum $H \pm$ woody $\pm 5'$ cor. w. with a medial per. stripe
 7 Solanum $H \pm 5'$ without ant. y.
 8 Eustrogon $H \pm$ fr. g. with darker longitud.
 9 Triumfetta $S. with subcan.$ cor. w. to pink. w.
 10 Strobilanthus $S. 3-5'$ with pet. o.
 1 Miconia $S. elong. bran.$ fr. pinkish brown.
 2 Pheax $S. parasitic$
 3 Hydrocotyle $S. on comp. (Cyp?)$
 4 Calceolaria $S. or small$
 5 Cassia $S. 8-12'$
 6 Clematis $H. succ. up to 3'$
 7 comp. $H. repent$
 8 Asplenium $H \pm 3'$ cor. br. y.
 9 Arenia $S. 2-3.5'$ pet. br. y.
 20 Adiantum $H \pm$ woody infl. greenish w. throughout
 1 ~~Catocala~~ H mag. ; fls. pink. y.;
 2 Ugeratum H ~~to~~ fil. pink.
 3 Waetheria H
 4 Pheax rugosus H
 5 Monochaetium H
 6 Begonia grandis H
 7 Aotalaria H
 8 Rub. H
 9 Columnea H
 30 Cypha H
 1 Rubus H
 2 Rubus H
 3 Brachyotum H
 4 Piper H
 5 Arel. H
 6 Fuchsia H
 7 Lophocampylus H
 8 Boehmeria H
 9 Cordia H
 40 Gaultheria H

May 5 thickets along river ± 2200 m. ^{2200 m.} ~~2500 m.~~ (Pangulca-Jamapa) Ccarapa

wooded banks ± 1000 m. Ccarapa

- 22341 *Nakunaria*
 2 *Epideudrum*
 3 *Ageratum*
 4 *Grass*
 5 *Lupinus*
 6 *Hyptis arborea*
 7 *Stenomesson*
 8 *Epideudrum*
 9 *Duggena*
 58 *Hyptis*
 1 *Alternanthera*
 2 *Opalis*
 3 *Trichsia*
 4 *Phenax*
 5 *Peperomia*
 6 *Rub.*
 7 *Pilea diversifolia*
 8 *Psychotria*
 9 *Selaginella*
 60 *Anthurium*
 1 *Orchid*
 2 *Polystichum*
 3 *Diplazium*
 4 *Selaginella*
 5 *Solanum*
 6 *Doehilus latifolius*
 7 *Doehilus lucianifolius*
 8 *Lycopodium*
 9 *Asplenium*
 70 *Niconia*
 1 *Carex*
 2 *Eleocharis*
 3 *Casaria adenaria*
 4 *Polypodium cancellatum*
 5 *Piper*

H to 3'

H ter

H

H to 5'

H to 25'

T 15-20'

H

H ter

S 5-7' dep.

S to 6'

H lax, ± succ.

H succ.

S 5-8'

S 6-8'

H sp.

S along, br.

S to 6'

H ter to 4'

S 6-8'

H

H ter

H ter

H

H nodulose

H subter.

H

S to 6'

S br + tryp.

H ter

H ter

H ter

H

S 8-10'

H

H ter

S or low T.

S 10-15', along br.; fl. deep pi

H rep.

S 6-8'

Per. gr.

Per. pi., lower ~~seg~~ gr. apex

Cr. like gr. w., lower rich pi

St. bl., y center w. bl., beet w., purple apex

Cor. bluish-pi.

Per. light y, striped light g

Per. bright y

Fr. only

Cor. w., pi. tinged

Infl. gr. w.

Pet. y

Sep. pi. r., pet. r.

Infl. green

Fr. wh.

Per. infl. red; cor. red

Fr. only

Per. w., per. green

Fr. (incl. stipe) to 6'

Cor. w, fleshy, anth. y.

at summit of stem

Fr. gr.

Fr. gr.

Fr. gr.

Fr. gr.

Fr. gr.

Fr. gr.

Fr. gr.

Fr. gr.

Fr. gr.

Fr. gr.

Fr. gr.

Fr. gr.

Fr. gr.

Fr. gr.

Fr. gr.

Fr. gr.

Fr. gr.

Fr. gr.

Fr. gr.

May 5 Open hillsides

± 1500 m.

C. Garraza

densely wooded valley

wooded banks

- 22376 Lichen
 7 Lichen
 8 Valeriana H. 12-20' cor. greenish w.
 9 Acalypha T. terr.
 80 Peperomia H. cor. y.
 1 Calceolaria T. 10-15'
 2 Sparna T. semi-prostrate among
 3 grass H. shrubs up to 6' l. crisp dist., paler prox.
 4 Sparna H. U.
 5 Asplenium H. terr.
 6 Polypodium H. ep.
 7 Cavendishia S. 8-12' tube cor. dull red lobes.
 8 Muehlenbergia S. 3-6' with pet. br. bl.
 9 Habschiania H. terr. per. seg. g.
 90 Begonia arborea T. 12-20' upl. up to 2' across, leaves up to 1.5' wide
 1 Polypodium H. on moist banks
 2 Claphoplosum H. "
 3 hepatic on moist tree trunk
 4 hepatic on moist soil
 5 moss on moist soil
 6 hepatic on moist soil
 7 hepatic on tree trunk
 8 lichen on tree trunk
 9 lichen on tree trunk
 400 lichen on tree trunk
 1 Polypodium H. on moist bank.
 2 Crotan S. 4-5'
 3 Hedyarum T. faller, apparently 25' or more
 4 Marchantia on moist soil
 5 orchid H. ep.
 6 Trichomanes H. on moist bank
 7 Lycopodium H. stipe up to 5', fr. 3-4'
 8 Pteris pedunculata T. 15-20' pet. w.
 9 Viburnum lasiophyllum H. up to 4' cor. greenish w.
 10 Valeriana

May 5 densely wooded valley ^{+1500 m.} Cc
 o.k. Barro Colorado
 densely wooded valley

- 22411 *Miconia*
 2 *Andropogon*
 3 *Cyrtia*
 4 *Pitcairnia*
 5 *Meibomia*
 6 *Sphalactia*
 7 *Stachys*
 8 rub.
 9 *Miconia*

 20 ind
 1 *Loxostoma*
 2 *Lox. longophy.*
 3 *Camp.*
 4 *Elaphoglossum*
 5 *Piper*
 6 *Hesperonia*
 7 *Cyphoptera*
 8 *Oa*
 9 *Valeriana*
 30 *Graphalium*
 1 *Elaphoglossum*
 2 *Psammisia*
 3 *Phlebodium*
 4 *Lichen*
 5 *Orchid*
 6 *Phenax*
 7 *Columnnea*
 8 *Phyllanthus*
 9 *Pilea dancidora*
 40 *Demostedia*
 1 *Comp*
 2 *Abutilon*
 3 *Polypodium*
 4 *Richardia*
 5 *Clethra*

- ~~T. 20-25'~~ pet. & sta. w. calyx brownish
 S. 6-8'
 H. woody at base cal. tube r, streaked with
 H. 1-2' g. ; large petal r.
 H. terr. per. br. f.
 H. subcaudant pet. bl.
 H. V. stan. bl, paler prox. midvein
 yellow. in; unsp. bl. out, keel light blue.
 H. + woody, cor. deep r., sty. w. protely.
 H. up to 3' cor. w.
 H. V. pet. w.
 T. 12-15' fr. g.
 H. ~~T. 8-15'~~ Sep. rich pet. w.
 with divaricate lvs., rays w.; fls. white
 H. 4 to 7' gish y.
 S. 6-10' rays; fls. gish y.
 sta. purple.
 H. 12-20'
 I. terr.
 H. terr.
 H. pet. w.
 H. terr. per. w.
 H. slender cor. gish w.
 H.
 H. small T. cor. + lobes gish w. (bl. gish).
 S. 10-15' ant. br.
 H.
 hanging from trees
 H. ep. fr. g.
 S. 3-5' Infl. greenish
 H. Cor. bright red
 H. to 3' Pet. gish-w.
 H. Infl. gish
 N. Caudex bulb. fr. to 6'
 S. 5-7', along br. Fls. deep y
 S. 10-12' Pet. salmon-y
 H. herb
 V. herb
 T. 20-25' Cor. w
 fr. only

May 6 thickets along stream ^{+1500 m.}

(*Barra*)

^{+1200 m.} (*Barra*)

open hillside
~~in road~~
 open hillside

t. a. s.
 o. h.

deep woods

thicket

on moist bank
 deep woods

22446	Grass	H to 5'	
7	Eupatorium	S 8-12'	Cor. & styles gr. - w.
8	Monnina	H ^{± woody; stem} suberect, to 5'	Pet. deep blue
9	Trichantha	S ^{stem erect} 4-8'	Cor. tube cream w. purp - red.
50	Cleistanthus	S 6-8'	infl. greenish - wh.
1	Piper	S 6-8'	
2	Meibomia	V herb	St. ovary pinkish blue, fr. wh.
3	Siparuna	T ^{20-25'} 10-15'	Fls. orange green
4	Columna	H coarse	Cor. red.
5	Serjania	V ^{± woody}	Pet. wh.
6	Vernonia	S 6-12'	Fl. pinkish blue
7	Nicotia	S or T 12-15'	Pet. wh.
8	Rapanea	T 10-12'	Fr. deep gr.
9	Lycopodium	V	
60	Baccharis	S 8-10'	Pappus wh.
1	Eupatorium	S 8-10'	Cor. gr. - w., lobes & styles
2	Coccoloba	H lax	Fr. deep blue
3	Ageratum	H ^{to 5', much} branched	Cor. gr. - w., lobes & sty. deep
4	Valeriana pavonii	V ^{± woody}	Cor. gr. - w.
5	Struthanthus	S ^{paras. along br.} 6-10'	
6	Cordia	S ^{20-25'} 6-10'	
7	Myricarpha	T ^{infl. pendant} 20-25'	
8	Solanum	S	Cor. w., anthers y.
9	Orchid	H ter	Per. rich purple
70	Epidendrum	H ^{ter}	Per. pale pi.
1	Pouzolzia	S 6-10'	
2	Crotalaria	H	Cor. y, red-stippled within
3	Polypodium	H ^{repent}	
4	Myrcia	T 8-12'	Fr. only
5	Cleistanthus	T 15-20'	Pet. wh.
6	Polypodium lucidulum	H ^{rep}	
7	Asplenium	H	
8	Columna	H	Cor. red
9	Liatris	S ^{to 10', along} 10-15'	Ray bright y; fl. gr. - y
80	Podocarpus	S ^{± 9'}	

May 6 Open hillsides

± 1000 m. (Barraza - Aina)

woods

wh. in lobes
dist out
thickets

deep woods

thickets

pi. - blue
open thickets
woods

pink

thickets

woods

open thickets
dense forest

- 22515 ~~Melastoma~~
 6 Melastoma
 7 ?
 8 ?
 9 Orchid
 20 Stenandrium
 1 Habenaria stenactylus
 2 Pausanias
 3 Eugenia
 4 Palicourea
 5 Raccoban
 6 Grass
 7 Moss
 8 Paspalum
 9 Dryopteris
 30 Myrica
 1 Aca
 2 Hep.
 3 Heliconia
 4 Chelonanthus
 5 Grass
 6 Liparis
 7 Malaxis
 8 Orchid
 9 Orchid
 40 Solanum
 1 Crotalaria
 2 Orchid
 3 Orchid
 4 Hydrocotyle
 5 Selaginella
 6 Miconia
 7 Heliconia
 8 Polypodium
 9 Polypodium
 50 Philodendron
- H ^{± woody below} stem simple, to 4'
 T 20-25'
 T 20-30'
 H ^{ter. st. simple,} ^{thin shrub,} to 7'
 H vine
 H ter
 H to 5'
 H
 S ^{± 7'} stem simple
 S 6-9'
 H to 6'
 On tree trunk
 H
 H
 T 12-15'
 H ter
 On wet trees
 H Pet. ^{± 3', lvs. 5' x 1.5'} ^{ped ± 3'}
 H
 H
 H ter
 Eph
 Eph
 Eph
 H ter to 5'
 S to 7'
 H ter
 Eph
 H stem rep.
 On forest floor
 S to 6'
 H ^{lvs. to 4' x 1'} ^{pet. 3'}
 Root. repeat after
 H climbing up tree trunk
 H to 2'
- st. pi., wings light bl
 keel w
 Fr. reddish when ripe
 Buds green
 Fr. only
 Cor. cream-w
 Per. gr.
 Pappus w
 Fr. gr.
 Heads gr.ish-w
 Fr. gr.
 Per. w
 Br. y
 Cor. green
 Fr. only
 Per. seq. rose-red, green apex
 Per. seq (wilted) reddish
 Fr. only
 seq. salmon dist., pale prox
 Pet. pure y
 Buds gr.
 5-6 seq. brown, lip pi, col. gr.-w
 Infl. gr. w
 Fr only
 Br. gr. prox, pi. dist.
 Spathes brownish red

May 8 thickets
woods

in
500-1000m. Aina

thickets

woods

thickets

dense forest

1000 m -

thickets

dense forest
woods forest

22551 *Smilax* V ± woody
T 30-40'

2 *Anona*

3 *Dryopteris* "disophylla" H

4 *Abutilon* H to 4'

5 *Consp.* H

6 *Solanum* H to 7'

7 *Nabenaaria* "alba" H

8 *Cracca* "mitis" S 3-5'

9 *Nabenaaria* H ter

60 *Orchid* H ter to 5'

1 *Rubus* "sempervirens" S to 7', along

2 *Columma* H to 3-5'

3 *Anthurium* H ter

4 *Peperomia* H ter on forest floor

5 *Piper* S 5-7'

6 *Piper* S 4-5'

7 *Polygala* H

8 *Epilendrum* H ter to 7'

9 *Malaxis* Ep h

70 *Lichen* on tree

1 " " " "

2 " " " "

3 " " " "

4 " " " "

5 " ? " "

6 " " " "

7 " " " "

8 " " " "

9 *Hep.* " "

80 " " "

1 " or lichen? " "

2 *Lichen* " "

3 *Hep.* " "

4 " " "

5 *Moss* Base of "

Pet. fleshy, wh.

Pet. + st. y

Hds pinkish wh.

Cor. w., aneth y

Per. pure wh.

Pet. w, gr.-tinged

Seg. wh in, gr. tinged out

Seg. deep magenta, lip

Pet. wh

Cor. bright r.

Pet. to 3'

Lvs. reddish beneath

Pet. blue + cream wh

Per. bright y; inf

Seg. deep r.

May 8 open woods.
~~dense forest~~

1050 m.

~~750-1000~~

Aina

clearing

thickets

clearing

woods

wh. cut out thickets

~~dense forest~~ open woods 1000 m.

sometimes branching

22586 Orchid

7 Dryopteris

8 Polypodium

9 Peperomia

90 Orchid

1 Laelia

2 Orchid

3 Vayria

4 Pseudorichilus

5 Orchid

6 Orchid

7 Orchid

8 Oxyanthus

9 Lichen

600 Orchid

1 Lichen

2 Moss

3 "

4 Paspalum

5 Stylosanthes

6 Cracca caribaea

7 Chamaecypar

8 Grass

9 Stenophyllus

10 Orchid

1 Orchid

2 Orchid

3 Inga

4 Ardisia

5 Habenaria

6 Santalera

7 Relbunium

8 Piper

9 Ploradendron

20 Remealnia

Ep h

H

H Rhiz. depend

H ter.

Ep h

H ter

Ep h

H saprophyte

Ep h

Ep h

Ep h

Ep h

S par.

On twigs

Ep h

On tree

" "

" "

" "

H

H br. subprostrate

H br. prostrate

H

H

H

Ep h

Ep h

Ep h

S 4-5'

H

H ter

S 2-4'

H br. interstrial

S 5-8'

S par.

H br. stems to 4'

H br. at base

Per. brownish (wilted)

Fr. only

Frond to 4' (with petiole)

Per. brownish (wilted)

Per. pink-w., lip deep pink

Per. green-w., purple dotted

Cor. y

Per. pinkish (wilted)

3 seg. pinkish, gr. dist.

seg. brownish (wilted)

Bracts purplish; fls. pinkish

5 seg. & col. green-gr., lip wh

Pet. light y in, per red-stained

Pet pinkish-blue

Pet. wh

Seg. light green

Seg. pinkish-w

Seg. deep pi.

Pet. deep gr out, light gr in; fls w

Per. green

Per. pi

Fr. w.

Bracts ashy-w

Per. light green

May 8

dense forest of low woods

Aria

1000

lip gr., purple-dotted; col. deep purple

(wilted)

clearing

dense forest o.w.

open clearing

woods

- 22621 *Dryopteris* H
 2 *Palicourea* S 8-12' Br. infl. red
 3 *Adiantum* H Cor. y, lobes red
 4 *Piper* S 8-12'
 5 *Liliaceae* H stem auro. Per. wh.
 6 *Danaea* H
 7 *Heliconia* H to 6' Br. bright r., gr. margin & back
 8 *Dryopteris* H
 9 *Pothomorphe* H to 6' Spikes wh.
 30 *Aspidotrium* H \pm woody Pap. wh.
 1 *Miconia* S 10-12' Fr. black
 2 *Croton* H? up to 20' slender Br. bright r.; per. pi.
 3 *Palicourea* S 9-12' Fr. only
 4 *Piper* S 6-10'
 5 *Hep.* On *Piper*
 6 *Chamaecyp.* H Pet. w
 7 *Solanaceae* H \pm woody trailing up to 6' long. Fr. light gr.
 8 *Asplenium* H
 9 *Amargill.* H Fr. or. r.; seeds black.
 40 *Urt.?* H along cr.
 1 *Tringus* On fallen tree
 2 *Tringus* " " "
 3 ~~*Tringus*~~ *Ephocaerylus* W. U. cor. br. p.
 4 *Tringus* " " "
 5 *Urera laciniata* T 12-15', trunk slender
 6 *Lasiacis* V herb
 7 *Demarestia* H? Stipe \pm 5'; fr. 4-6'
 8 *Ruellia* H to 4' \pm woody Cor. pinkish - bl.
 9 *Comp.* S 4-6' or woody vine, branches tangled fls. pale, dash gr. - y.
 50 *Dryopteris* H \pm 4'
 1 *Demarestia* H Stipe 4', fr. 3'
 2 *Piper* S 8-10'
 3 *Miconia* T 10-15' Pet. pi. to wh
 4 *Cyanea* T.F. trunk stout, \pm 2'; stipe 4', fr. 8'
 5 *Comp.* H 6-7' Flowers deep y

May 8 Edge of dense woods
 Estrella, Valley of Rio Piedra (300 m. from the river)

dense forest woods

edge of woods

- | No. | Plant Name | Height | Flower Color |
|-------|----------------------|---|--|
| 22656 | Hippia | H 3-4' | Cor. light pi. |
| 7 | Phytolacca | H with trailing | Pr. deep purple |
| 8 | Porchammeria | T 10-15' | Cor. light y, ^{tube} gr. tinged out |
| 9 | Blechnum | H | |
| 60 | Dianthera | S 3-6' | Cor. bright r. |
| 1 | Acalypha | H 5-6' | Inf. light gr. |
| 2 | Acalyph | S 10-12' "same as 22661? It has a very different growing habit" | |
| 3 | Delaginella | H repeat below | |
| 4 | Delaginella | H | |
| 5 | Moss | Decayed log | |
| 6 | Porchammeria | T 12-15' | Cor. light y
Pr. olive-green (next ribs) |
| 7 | Pityrogramma | H | |
| 8 | Journefortia retacea | S 2-4' | Corolla wh, tube gr. tinged out |
| 9 | Begonia | H succ. to 3' | Pls. wh. |
| 70 | Koellickia | H | Cor. light blue, pi. tinged |
| 1 | Delaginella | H | |
| 2 | Clidemia | S 6-8' | Pet. wh, anthers light gr. |
| 3 | Isoboma | H 1-2' | Cor. red |
| 4 | Isoboma | H | Pr. to 8' l., depending on branch |
| 5 | Browallia | H | Cor. bright blue, ^{pale} outer lobe |
| 6 | Cuscutella | low S or trailing to 6' l. | Whole gr. |
| 7 | Piper | T 10-15', trunk slender, ± 2" diam. | |
| 8 | Kylinia | H | |
| 9 | Moss | On bank | |
| 88 | Moss | " | |
| 1 | Passiflora ligularis | H ± woody | Sep. wh. in, gr. out; pet. pinkish w rays wh, deep pink-stippled below |
| 2 | Acalypha | T 15-20' | Inf. greenish |
| 3 | Browallia | H to 3' | Cor. bright blue, y. & w at cent. |
| 4 | Lobelia | H | Cor. pale pi |
| 5 | Eupatorium | H to 7', branched above | Cor. tube w, pi. tinged ^{above} 5 lobes; |
| 6 | Tillandsia | H ter | Pr. gr. |
| 7 | Myriocarpa | T 20-25' | Inf. greenish |
| 8 | Eupatorium | H to 4' | Fls. pinkish w |
| 9 | Centropogon | S stem subsimple to 4' | Cor. light red; lobes ^{above} 5 lobes; - r. |
| 90 | Comp. | H to 5', strong odor | Fls. gr., styles green. |

May 8 Edge of woods. Estrella, Valley Rio Pieni ^{500m.} (± 500 m. lower than Pieni)

at base

~~May~~
May 9 Rocky bank, in shade ^{grows} *Arisaema*

Thicket
light purpl. stipulations; oper. wh., red-
purpl. margin
open woods
open hillside

styles wh. thickets
open rocky hillside
open woods
thickets

- 22691 Comp H Rays & fl. y, auth. deep purp
2 Habenaria H Per. gr. wh.
3 Tringus On log Orange-r.
4 ~~Clusia~~ Clusia T 15-25' Pet. wh.
5 Euphorbia H to 3' Fr. purpl. proc, gr. dist.
6 Lantana S 5-9' Cor. pi, tube y at center
7 Pityrogramma "aerea" H y beneath
8 Cordia S br. at base, with slender branches 4-6'; calyx light gr.
9 Solanum H to 3' Fr. gr., darker striped
108 Tibouchina S 3-7' Pet. magenta-pi., auth. y
1 Euphorbia H to 2' Bracts reddish; pet. gr. w.
2 Tillandsia ~~Commersonia~~ H to 2' Bracts & per. pink
3 Moss On bank
4 Clidemia S 2-3' Pet. cream-wh.
5 Miconia S or low 10-12' Buds & fr. only
6 Clidemia S 8-12' Pet. light pi.
7 Browallia "parviflora" H Fr. bright purp.
8 Miconia V herb Cor. blue, paler & ab-striated
9 Lippia V slender, to 6' Cor. bright green
10 Liabum V herb, to 6' Dupl. rich pi.
1 Scoparia dulcis V herb, to 6' Rays bright y, fls. darker y
2 Ruella H Fr. green
3 Phoradendron H Cor. bluish-pi.
4 Adiantum Par shrub Lvs dark gr.
5 Piper H S 1.5-2', spreading branches
6 Cyathea T.F. trunk \pm 2.5', st. \pm 5', fr. 6-7'
7 Pteris H Stipe \pm 3', fr. \pm 4'
8 Mikania V woody Fr. green, lobes & sty. w.
9 Ameria phyllitidis H H repeat on tree
20 Polypodium S with elong. fr. Fr. only
1 Hancchia V herb Fls. pi.-w
2 Passandra ~~Mimosa~~ V herb Fr. rose red when ripe
3 Siparuna T 20-25'
4 Lonicera V herb
5 Dryopteris H

May 9 Thickets 750-800 m. Area

Rocky open hillside
Thickets

open woods

dense forest

- 22726 *Dryopteris* H
 7 *Diplazium* H
 8 *Peperomia* H trailing on fallen log
 9 *Isoloma* H to 2' Cor. bright r.
 30 *Heliconia* H erect, to 7' Bracts dark r; fruit g-y
 1 *Polygala* H to 1.5' Pet. light pi.
 2 *Inga* T 12-20' Pet. & stem cream w
 3 *Tournefortia setacea* S 6-8' along br. Cor. cream-w; fr. w.
 4 *Viburnum* T 12-15' tr. slender + 2" diam.; cor. w; fr. bl.
 5 *Grass* H, elong. br.
 6 *Mitania* V ± woody Cor. greenish-w.
 7 *Grass* H branched near base - to 2'
 8 *Moss* On rocky shaded bank
 9 *Sporoxea "campanella"* V herb Cor. pinkish purp. dist. ^{wh} _{prose}
 40 *Sporoxea "campanella"* V herb Cor. " " " g-g "
 1 *Colletes* V herb Cor. w
 2 *Dioscorea* V herb Per. gr.-w
 3 *Paullinia* V woody Fr. bright r
 4 *Asplenium* H
 5 *Moss* On rock
 6 *Pilea hyalina* " " Infl. pinkish.
 7 *Mucuna* V ± woody below Pet. or red
 8 *Castilleja* H 2-2.5' Upper br. red dist.
 9 *Tringus* On log
 50 *Orchid* H ter Pedicels wh.; per. seg. brown
 1 *Heliconia* H ter + repent
 2 *Ant. C.* T Fls. gr.-y.
 3 *Stelis* Ep. h Per. g-w
 4 *Orchid* Ep. h Per. apparently brownish-pi.
 5 *Stelis* Ep. h Per. greenish, rose-dotted
 6 *Polypodium* H repent on tree
 7 *Equisetum giganteum* H 3-5'
 8 *Tournefortia* S, br. elong. to 7'
 9 *Palu Hydrocotyle* H rep. Infl. g-w
 60 *Palu* Plant 3-4'

May 9 ~~dense forest~~ ^{woods} 750-800m. Aina

open wood

May 10 thickets ± 800m.

Wooded banks
dense woods

thickets
edge of woods
dense forest

- | | | | |
|-------|----------------------------|----------------------------|--------------------------------|
| 22761 | Eugenia | Shrub T | Pet. wh. |
| 2 | Ruellia | H \pm woody to 2' | Cor. tube 12-pi, limb with pi |
| 3 | Begonia 'scandens' | H ter stem \pm scandent | Br. only |
| 4 | Palau | 3-4' | Infl. at base |
| 5 | Boehmeria | 5-10' | Infl. glaucous |
| 6 | Peperomia | H ter | Spikes wh. |
| 7 | Hoffmannia | S | Br. wine-colored |
| 8 | Saurauia | T 20-25' | Pet. wh. |
| 9 | Peperomia | H ter stem rep. | |
| 70 | Isoloma | H \pm 1' | No fls. |
| 1 | Hep. | On leaf | |
| 2 | Dioscorea cucurb. | V herb | Per. gr. y-g. |
| 3 | Stelis | Ep. h. | Per. gr. - w. |
| 4 | Peperomia | H rep. on tree trunk | |
| 5 | Polypodium | On tree | |
| 6 | Stelis | Ep h | Per. gr. - w. |
| 7 | Pleurothallis | Ep h | Per. light gr. |
| 8 | Malaxis | Ep h. | Per. deep reddish-pi. |
| 9 | Dryopteris | H | Stipe 2-2.5' fr. 3' |
| 80 | Peperomia | H ter rep. | Lvs. dark gr. above, pale ben. |
| 1 | Fern | Rep. on fallen log. | |
| 2 | Diplazium | H | |
| 3 | Ichthyanthus | H | |
| 4 | ? | Shrub \pm 2.5' | Cor. w., calyx light gr. |
| 5 | Belanophora | H saprophyt.? | Plant black |
| 6 | Hep. | On fallen tree | |
| 7 | Moss | " " " | |
| 8 | Hep? or lichen? | " tree | |
| 9 | Moss | " decayed log | |
| 90 | " | On bank | |
| 1 | " | On forest floor | |
| 2 | Alternanthera | H lax, clasp. br. | Infl. wh. |
| 3 | Nikania | V \pm woody | Pappus pi |
| 4 | Urera baccifera | H coarse erect stem simple | Infl. dark pi. |
| 5 | Crotophaga menispermifolia | V herb | Sterile |

May 10 Dense forest \pm soom. Aina

Thickets

- 22796 *Trungus* On log Orange-red
 1 *Cyperus* H
 8 *Rhynchospora* H
 9 *Solan.?* ~~Verb.~~ *Verb.* H coarse ??
 800 *Passiflora rubra* V herb see notes ~~separ. pet. gr. - w. rays~~
 1 *Quamoclit coccinea* V herb Cor. scarlet
 2 *Cuphea* H + woody below Pale o / pet. cream-w
 3 *Passiflora* H 1-2-branched
 4 *Passiflora* H to 3'
 5 *Lichen* H to 5'
 6 Moss On tree trunk
 7 *Dryopteris* On dec. log
 8 *Carex* H
 9 *Oplismoglossum* H on damp soil
 10 *Clidanthus* S 4-6' Cor. w
 1 *Jurpima* T 20-25' Fr. light r; pet. g-y
 2 *Tajetes* H to 3' Rays gr. - w
 3 *Calceolaria* H to 1' Cor. light y
 4 *Rhododendron* Spr. on Citrus Lvs. deep gr.
 5 *Citrus* T 15-20' Fr. very acid, elong. to 5" x 3" diam. pet wh.
 6 *Citrus* T 15-20' Fr. very acid, sphenoid juice squeezed into soup pet wh.
 7 *Citrus "limon"* T 15-20' Fr. acid, pet wh.
 8 *Heliconia "lucida"* T 20-25' Fr. eaten
 9 *Phaseolus "singacca"* V herb Pet. cream wh; fr. eaten
 20 *Cyclanthus "cayana"* V herb Cor. w; fr. eaten
 1 *Phyllanthus* V herb Fr. whitish
 2 *Phyllanthus "barbarea"* T 15-20' Fr. gr. trunk subsimp, slender; branched drooping
 3 *Coffea* S 8-12' Cor. w; fr. red
 4 *Convolvulus* H to 1.5' Per. bl
 5 *Passiflora serrato-digitata* V + woody below See notes
 6 Umb. H flex, to 4' 7 nfl. gr.-gr.
 7 *Erythrina* T 25-35' Pet. trad, paler in older
 8 *Peltiveria?* H 5-12' Sep gr-wh.
 9 *Couph* H ex to 2.5' Rays ofl. wh
 30 *Peperomia* H ter

May 10 ~~Woods~~ ~~forest~~ clearing Edge of woods ± 800 m. Aina

gr. gr.

May 12 thickets 900 m.

open woods

clearing

thickets

striped

- 22831 *Polystichum* H
 2 ~~mass~~ on rock
 3 ~~mass~~ " "
 4 *Urcinia* H
 5 *Diplazium* H
 6 *Anthurium* H ter
 7 " H ter
 8 *Asplenium multisectum* H
 9 *Philodendron* H ter
 40 *Ipomoea* V herb
 1 *Croton* S 8-10' ?
 2 *Orchid* Ep h
 3 *Gossypium* S to 8' Per. bright y
 4 *Hamelia* S \pm 4' Pet. light y
 5 *Abutilon* S to 7' Cor. r.
 6 ~~Styphelia~~ "coca" S erect fr. Pet. w
 7 *Piper* S low to 5' Cor. w. Natives chew
 8 *Polygala* S 10-12' Lvs
 9 *Trema* H 3-4' Pet. pi, greenish-tinted young
 50 *Phaseolus* S with br. to 10' Br. only
 1 *Mimosa* V herb Pet. cream - wh
 2 *Ipomoea* V herb Pap. pi.
 3 *Stachytarpheta* V herb Cor. pi, 3 wh. at base
 4 *Cardiospermum* H to 2.5' Cor. pink-bl., paler center in
 5 *Menisperm.?* V herb Pet. pink-w
 6 *Nephrolepis* H ep. on palm trunk
 7 *Euph.?* + 12-20' Fr. only
 8 *Bomarea* V herb Req. r.-y, inner gr.-tinged dist or purple-dotted
 9 *Eupatorium* S or woody V? Cor. pink-w., style y-g
 40 *Clibadium* S Cor. w, anther deep purp
 1 *Polypodium* On trees
 2 *Melast.?* T 10-15' Fr. olive-gr.
 3 *Lupind.* T 12-18' Pa. gr.
 4 *Palm* + 6', stipe 2', "fruit 8-10' fr. black
 5 *Xanthosoma* H appressed to tree trunks; spathe w

May 12 woods

900m. Aina

thickets

May 10 thickets, Valley of Rio Apurimac, near Kimpitiriki 4000m

deep woods

Head. pink-pi.

- 22846 *Peperomia* Ep. h.
 7 ? "granadilla de chunchus" T 12-15' Br. orange
 8 ? T 8-12', spreading br. to 20' fr. y
 9 *Vittaria* Ep h
 70 *Asalypha* T 8-14'
 1 *Danaea* H
 2 *Tabernaemontana* T ± 5' tr. slender; cor. wh.
 3 Rub. S 5-7' Pedicels deep pi
 4 *Acanth.* H to 2' Cor. tube pink w, lobes blue, pale at base in
 5 *Demostedtia* H seip 2-2.5' fr. ± 3'
 6 Rub. H ± under below Br. bright blue
 7 *Polecoinea* S 10-12' Red. pi.; Cor. wh. ?
 8 *Acanth.* H low deep pump. den.
 9 *Sarcocolla* H Cor. red
 80 *Cestropogon* g along br Cor. tube r, lobes & stam tube pi.
 1 *Polypodium* H ter
 2 *Cornelia* H coars 3-5'; fr. arch pi.
 3 Rub. H wavy Cor. w? or light y?
 4 *Marant.* H Br. or. r.
 5 *Calathea* H Br. deep to Br. light y
 6 *Orchid* Ep h 5' reg. pendul-w
 7 *Mushroom* On log Pl. pinkish
 8 Moss " " " "
 9 *Aroc.* V herb Cor. yr. w
 90 *Polypodium* On tree
 1 Rub. T 10-15' Br. pi., greenish dist.
 2 *Acanth.* H ± 2' Br. mahogany-r.
 3 *Psychotria* S 2-5' Br. black
 4 *Peperomia* H climbing on branches
 5 *Peperomia* X rep. on tree
 6 *Ruellia* H Cor. pi.
 7 ? S 2-4' Br. bright gr. (int. w. fr.)
 8 ? S 4-8' Br. wine-color
 9 *Palu* seip 2-4' frond 4-6' Br. pinkish-purple
 900 ? T 12-20'

May 10 deep woods, Valley Rio Apurimac, near Kimpitiriki

- 22901 Psychotria S Fr. bluish when ripe
 2 Sabicea herbacea H rep. Fr. bright r
 3 Psychotria H±2' Pedicels deep pi; fr. gr
 4 Hemiteles H Fr. 4-5', dark gr above
 5 ? T 12-15' Fr. or.
 6 Grass H±2'
 7 Psychotria T 10-12' Fr. rose-r. ripe
 8 Meconia S 6-10 Ripe fr. black
 9 Passiflora coccinea V herb sep. pet. scarlet
 10 Lasiacis V herb pet. wh. below fr. above
 1 Manihot "yuca" S 10-12' pet. w, pi.-tinged
 2 Crotalaria H coarse, to Fr. light gr., ribs fr. wh
 3 "arbo de almedon" T up to 12' Br. scarlet, tips gr.
 4 Acanth? H Used to wash with w. fls.
 5 Solanum H coarse Cor. deep pinkish blue, anthers y
 6 Clibadium S 10-12' Infl. w
 7 Euphorbia "coca" S up to 6' Pet. gr.-w; fr. or. red
 8 Asplenium H
 9 Commelinaceae H Infl. greenish - wh
 20 Psychotria H 2-2.5' woody (cl.) Fr. white wh
 1 Clidemia S 3-5' Br. deep pi
 2 Inga S? in tangle fallen to Pet. o ~~pink~~ stamens
 3 Grass H quick-pi.
 4 Mimosa? H? Pet. B blue, pi.-tinged
 5 Adiantum H
 6 Piper S 3-4'
 7 Siporuna V woody? (or 5 long. bi) Fr. deep pi.
 8 Asclep. V herb Cor. w
 9 Teranurus? V + woody below Pet. deep pi. st. paler out but
 30 Euph. S 10-12' striped with deep pi.
 1 Cissampelos V herb Fr. gr. - deep pi.
 2 Stenandrium V herb Br. light gr.; fr. red
 3 ? S 6-12' Cor. greenish - w
 4 Leg. V woody? Fr. only
 5 Ureca S 8-12' Buds only (greenish)
 Infl. green gr.

May 10 deep woods, Valley Rio Apurimac, near Kimpitiriki

min (tubular) w.; per. deep pi; gyno. red. ~~inflorescence~~ fl-tube deep red 10-12

Cuc. from crest. into thickets
 deep woods

Cult. on plantation
 Cult. thickets

Ph 510-12
 510-13 (small)

Cult.

Ph 510-21

deep woods

Edge of dense jungle along beach

- | | | | |
|-------|-----------------------------|---|---|
| 22936 | Bomarea | V herb | Out seg. or -y, in 2 rows |
| 7 | Lasiacis | V herb | slightly gr-tinged apex |
| 8 | Dioscorea | V woody | Per. cream-wh |
| 9 | Cassia | S 10-14' | Pet. bright |
| 40 | Missola | V woody | Pet. pi |
| 1 | Cissus sicyoides | V woody | Pr. black |
| 2 | Xylopia? | T 12-20 | Fls. gr.ish-w |
| 3 | Chouetia? | WV | Cor. gr. y. |
| 4 | Heliconia Acanth | W T 12-15' | Pr. pi. Cor. pi. |
| 5 | Polypodium | H tr | |
| 6 | Miconia | S 10-12' | Pr. wine-color |
| 7 | Acalypha | H \pm woody \pm 3' | Br. gr. Infl. deep r |
| 8 | Dalechampsia | H V | Pr. gr. |
| 9 | Philodendron | H flattened | Pr. gr. w |
| 50 | Trungus | On log | Obv. gr. above, salmon ben |
| 1 | Polypodium | H trailing | |
| 2 | Myriocarpa | T 12-20' | Infl. reddish |
| 3 | Pentaclethra | W. V. very common (esp. across mule trails) | |
| 4 | Sandbergia | W. V. rarely in fl. | Br. red, r. or y; cor. gr. y |
| 5 | ? | S much-tangled to 15' | Pr. brownish-purple |
| 6 | Moss | On soil | |
| 7 | Solanum | H \pm 2' | Pr. r; cor. w; anther g |
| 8 | Pityrogramma | H | |
| 9 | Cephaelis | H | |
| 40 | Tournefortia | S 3-4' | Cor. w; gr.-tinged |
| 1 | Dialanthea | H | spikelets w |
| 2 | Trungus | On tree | Pl. or. - r. |
| 3 | Trungus | On tree | Pl. w |
| 4 | Mainbot | S | Br. g, ribs wh; pet. w, hi-tinged |
| 5 | Dictyon | H | |
| 6 | ? | T 20-30' | Br. drooping to ground Infl. (buds) y-g |
| 7 | Acanth | H 3-4' | Cor. (apparently r) |
| 8 | Sea-weed | In river | |
| 9 | Serjania | W. V. | cor w, anther y |
| 70 | Solanum | H | Pr. deep purple to black |

May 10 Edge of dense jungle along beach Rio Apurimac Kimpitiriki 4000 m.

Among rocks, sandy beach

Edge of dense jungle along beach
Sandy beach
Edge of dense jungle ...

- 22971 *Lycopersicon* HV Pr. dark gr., white-mottled
lighter-gr. striped
2 *Solanum* H Cor. gr.-w; anthers w, gr.-tinged
3 *Kyllinga* H
4 *Bauhinia* On leaf
5 *Tectaria* H
6 *Cyclophorus* H
7 *Orchid* Ep h
8 *Orchid* Ep h Per. seg. pinkish
9 *Orchid* Ep h Buds gr.
80 *Bidens* H ± 4' Heads y
1 *Peperomia* Ep h
2 ? T 5-20' fr. elong., drooping; fr. light gr. (not ripe)
3 *Rosaceae* T 10-15' Pr. r.
4 *Anthurium* H climbing up tree trunk Shading greenish-w
5 *Olyra* H
6 *Acanth* H 3-6' Cor. reddish-pi.
7 *Dianthus* H 4' Pr. 4'
8 ? S 6-8' fr. drooping Buds (anthers?) deep pi
9 ? S 6-8' Calyx at length dark pink.
Rets. lilac; ripe fr. r.
90 *Piper* S 8-12'
1 *Cucurbit* HV Cor. y
2 *Bomarea* HV Buds red
3 ? HV Buds greenish-w
4 *Aroid* H epiphytic, appressed to tree trunks
5 *Plagiogynia* F. terr.
6 *Phytolacca* H Buds greenish-w.
7 *Fungus* on fallen tree
8 *Isora* Apr. S 8-10' Cor. w.
9 *Psychotria* S 4-5' female-colored
fr. becoming deep bl.
23000 rub. T. slender, l. 12-18'
1 mas on fallen T.
2 *Peliconia* W. U on S. with (calyx o.r. fr. becoming black)
3 *Plagiodendron* H ± 10-15' fr. becoming black
4 *Arum* S slender fr. g. ting. with p.
5 mel. l. 15-20'

May 10 Sandy beach, Rio Apurimac, near Kimpitirichi town.

Edge of dense jungle along beach

Sandy beach

Edge of dense Deep woods

Thickets

Deep woods

- 23006: palm
 7 aroid
 8 Cayaponia
 9 acauth.
 10 aroid
 1 Triantha
 2 anac.
 3 Tillandsia
 4 rub.
 5 Ruellia laevis
 6 Chorrelia
 7 Poly Cydopeltis
 8 Paleocarya
 9 Solanum
 20 grass?
 1 Acathium
 2 Psychotria
 3 rub.
 4 til.
 5 Piper
 6 Serradenia
 7 Combretae
 8 Calathea
 9 Biophytum
 30 Calathea
 1 Liliaceae
 2 Anacard.
 3 Cassia
 4 Cleistanthus
 5 Liliaceae?
 6 moss
 7 Tournefortia setacea
 8 Antropogon
 9 Histioglossa
 40 Stenorrhynchos
- stem slender, erect, 2-3' $\frac{1}{2}$
 H ep.
 H₂ U. cor. o.r.
 H cor. light blue.
 H^{terr.}
 H up to 3' per. w, blue tinged
 H 10-15'
 H ep.
 S slender, about 3' tall. fr. br. y.
 S stem erect, cor p., bracts y. y.
 T slender up to 15'
 W. U. cor. y.
 H₂
 S 8-12' bran. of upl. deep p.; cor. yish p. or, gnab. dist.
 H 3' fr. red pur.
 H^{terr. with} short erect stem cor. gnab. y.
 H slender
 S 6-10' cor. gnab. w.
 S 6-8' fr. wine-colored
 H + woody
 S 10-12' buds gnab. w.
 H U
 S 10-15' Cor. gish-wh.
 H 4-5' Dr. gr. (not ripe)
 H + woody bel. Per. gr., red-tinged
 H + 3' Buds gr.-wh.
 H + 3' Per. seq. greenish
 H woody bel. Infl. grish-w.
 T slender 12-15' Infl. y-g.
 H Dr. (not ripe) gr.
 S 8-10' Flowers wh.
 H Fr. r.
 Dec. long
 S 4-6' Cor. gish-wh.
 W V Fr. red
 H ripe +, fr. 12'
 H^{ter} Per. pinkish-r

May 11 deep woods, valley of Rio, Apurimac, near Kimpitirlei 4000m.

thickets

deep woods

thickets
 deep woods

- 23041 *Renanthera*
 2 Mushroom
 3 Rub.
 4 ~~Sabicea~~ *Cordia nodosa*
 5 Hep.
 6 Fungus
 7 Gall
 8 ?
 9 ?
 50 *Vanilla*
 1 Acanth.
 2 *Tournefortia*
 3 "Cube de almedon"
 4 *Erythrina*
 5 *Solanum*
 6 *Adiantum*
 7 *Clidemia*
 8 *Gladiolus*
 9 *Isodon*
 60 *Polypodium*
 1 *Sorocea*
 2 *Tresina*
 3 orchid
 4 *Peperomia*
 5 *Malvaceae*
 6 orchid
 7 orchid
 8 *Lidex*
 9 moss
 70 moss
 1 *Synopterus*
 2 *Pichonia*
 3 *Myrocarpa*
 4 *Piper*
 5 *Monochaetium*

- H Per. or.
 On dec. log
 T slender 10-15' Dr. wh.
 T slender 8-12' Co. whitish.
 On bark
 On fallen tree
 On leaf
 S slender, erect 4' Dr. deep gr.
 S 8-12' light Dr. gr.
 HV climbing over trees Foliage only
 H ± 1 ft. Cor. tube w, lobes gr.-w. *growing in colonies, but rare.*
 H 3-4' Per. pink
 S 3-5' with long br. *in paths*
 WV over tree tops Pet. or-
 H 3-4' cor. pink w, ant. y. *14 deep woods*
 H 10-15' fr. dull r.
 H V cor. br. o.; ant. y.
 H cor. o. r.; fal. y.; ant. w.
 H ep.
 H 10-12'
 T
 HV ± woody tufl. pink wh
 H ep. per. sep. deep. y.
 H ep.
 S 10-15' pet. red p.
 H ep. per. sep. pink y. spotted
 H ep. with p. per. sep. y. g.
 on fallen T.
 " " "
 " " "
 H stipe 3-5'; fr. 2-4'
 F 12-18'
 T 10-15'
 S 4-6' pet. w.

May 11 deep woods, Valley of Rio Apurimac, near Kimpiturihi 4000 m.

Pl 5 11-12

Extrella, valley of Rio Puni 5000 m.

- 23076 *Ischnanthus*
 7 *Asplenium*
 8 *Asplenium*
 9 *acanth*
 80 *Isachne*
 1 *Commelina*
 2 *Rhipia*
 3 *Browallia*
 4 *Besleria*
 5 *Physalis*
 6 *Clonelia*
 7 *Phenax*
 8 *acanth*
 9 *acanth*
 90 *Miconia*
 1 *Calliandra*
 2 *strytolac.*
 3 *Solanum*
 4 *Ligustrum*
 5 *Pteridium*
 6 *Sphaerocarpus*
 7 *Gemsonia*
 8 *Euphorbia*
 9 *Sorjaria*
 100 *Cestrum?*
 1 *Centauria*
 2 *Miconia*
 3 *guerr.*
 4 *rub.*
 5 *Rubus*
 6 *Abutilon*
 7 *guerr.*
 8 *Cassia*
 9 *Bletia*
 10 *Amaranthus*

- H climbing among alimbo.
 H
 H 1-2' cor. br. r.
 H with drooping
 H 3-5' per. w. p. tinged
 H with lax fr. becoming deep pur.
 H branches, pet. p.
 H cor. tube + lobes light blue
 H leaves without tube w. w. lobes
 H bracts lg. r. cor. light y.
 H densely beneath fruit black.
 H 3-4' at base, cor. cream w. par. spotted within at base; d. w.
 H fr. cream, ant. green.
 W. U.
 S. 8-15'
 H cor. br. y.
 S. 5-8' cor. deep p.
 S. 12-18' fr. rich p.
 S. 8-10' with elong. sta. rich p.
 S. 4-6' drooping branches
 S. 4-6' leaves pur. below.
 S. 4-6' pet. w. ting. with blue.
 S. 5-10' ant. pale y.
 S. 5-10' cor. rich p.
 H growing in dense thickets,
 H up to 10' h. cor. rich p.
 W. U.
 W. U. or S. with
 W. U. along bran.
 S. with elong. pet. green w.
 S. droop. bran. pet. w.
 W. U.
 W. U. or S. with
 W. U. tangled bran.
 S. 5-8' with bracts deep p.
 S. elong. bran. pet. deep p. fr.
 H with + scandent very thick.
 H branches cor. rich p.
 H
 H U. cor. w.
 H U. pet. w.
 W. U.
 S. 3-6' with pet. y.
 S. elong. bran. cor. rich p.
 H
 S. 8-12'
 H stem per. sep. rich pur.
 H to 3' Infl. green w.

May 14 deep woods

Estrella, valley of R. Penu 500 m.

thickets

blue in.

d. w. thickets

750 m. Arua

open hillside

- 23111 *Teramnus* HV pet. pink. w.
 2 *Tripteryx* H cor. & sty. green. w.
 3 *Mikania* H V lax, forming pet. rich p.
 4 *Rhexia* H tangles stem. & midrib & keel bl.
 5 *Phaseolus* H V 2-3' stamens tube. w.
 6 *Solanum* H cor. pink blue; ant. y.
 7 *Cecropia* T 15-20' cor. deep p.
 8 *Solan.* S 7-9'; few branched, lvs. & infl. at summit of bran.
 9 *Conaria* S or low T. infl. g.
 20 *Crotalaria* S 9-15' cor. deep y.
 1 *Eupatorium* S 5-8' pet.
 2 *Solanum* S 6-10' cor. tube pink. g., lobes p.;
 3 *Cypripis* S slender, sty. pale
 4 *Miconia* S up to 8' cor. w. bl. spotted without;
 5 *Boerhaavia* H ant. y.
 6 *Solanum* H repeat cor. w.
 7 *grass* H slender
 8 *Viburnum* T 10-15' fr. black
 9 *Vernonia* T 15-20'
 30 *Elaphoglossum* H
 1 *Elaphoglossum* T 12-20' cor. cream-w, fr. black
 2 *Viburnum* T or slender + 2" cor. tube w, lobes & sty pinkish
 3 *Moss* S along br. to 6'
 4 *Utricularia* H
 5 *Polypodium* H 12-20' cor cream-w; fr. black
 6 *Palicourea* On bank
 7 *Orchid* H cor. pi; fr. gr.
 8 *Orchid* H Rep on tr.
 9 *?* T 15-20' fr. gr.
 40 *Polypodium* S 15-20' 5 seg cr-w, lip pink & spotted
 1 *Thibaudia* H ter to 3' fr. gr.
 2 *Lichen* H ter to 3' fr. only
 3 " T 12-15'
 4 " H climbing on tree
 5 " S with along tr. S $\pm 12'$ cor. r.; fr. gr.
 EH
 EH
 EH
 On tree tr

May 14 *Flaccheta* 750 m. *Aina*
 open hillsides
 thickets

woods

o.h.

May 15 thickets

900 m.

shaded bank

woods

shaded bank

open woods

1000 m.

23146	Lichen	On tree tr.	
7	"	" .. branches	
8	Hep	" " "	
9	Lichen	" " "	
50	Orchid	EH	Seg. grass-gr.
1	"	EH	3 seg. grass-gr.; lip. ocol. deep
2	"	EH	Seg. light gr., lip. purp. apex
3	"	EH	Seg. light gr., lip. wh. dist.
4	"	EH	Seg. y-g, semitransparent
5	"	EH	Seg. light gr., lip. darker, col.
6	"	EH	Pr. gr.
7	"	EH	Seg. pinkish-br. (withered)
8	"	EH	Seg. light gr.; col. light y-g
9	"	EH	Seg. pinkish-r., gr. at base & marg.
60	"	EH	Pink gr.
1	"	EH	Bracts gray
2	"	EH	Seg. pi.-br. (withered)
3	"	EH	" " "
4	"	EH	Seg. light gr., lip. deep r. ^{upper} 1/2
5	Laelia	H ter	5 seg. pinkish-w, smaller faintly
6	Orchid	H base of tree	No fls
7	"	H base of tree	
8	"	H base of tree	2 seg. grass-gr., finely purple dotted; 2 seg. o lip deep
9	"	H ter	Seg. brownish (withered)
70	Mushroom	On dec. log	Cream-wh. above, wh. beneath
1	Fungus	" " "	Brownish
2	Viburnum	+ 12-20'	Pr. black
3	Borreria	H ± 1'	Cor. wh
4	Polypodium	H rep among rocks	
5	Asplenium	H	
6	Phenax	H woody at base ± 2-3'	Inf. green
7	Delaginella	On soil	
8	Hep.	On dec. log	
9	Moss	On dec. log	
80	Polypodium	H	

May 15 Ofar woods

1000 m. China

real

col. with r.-band ~~at~~ tow. apex

paler

lip gr.; fr. gr.

red-dotted

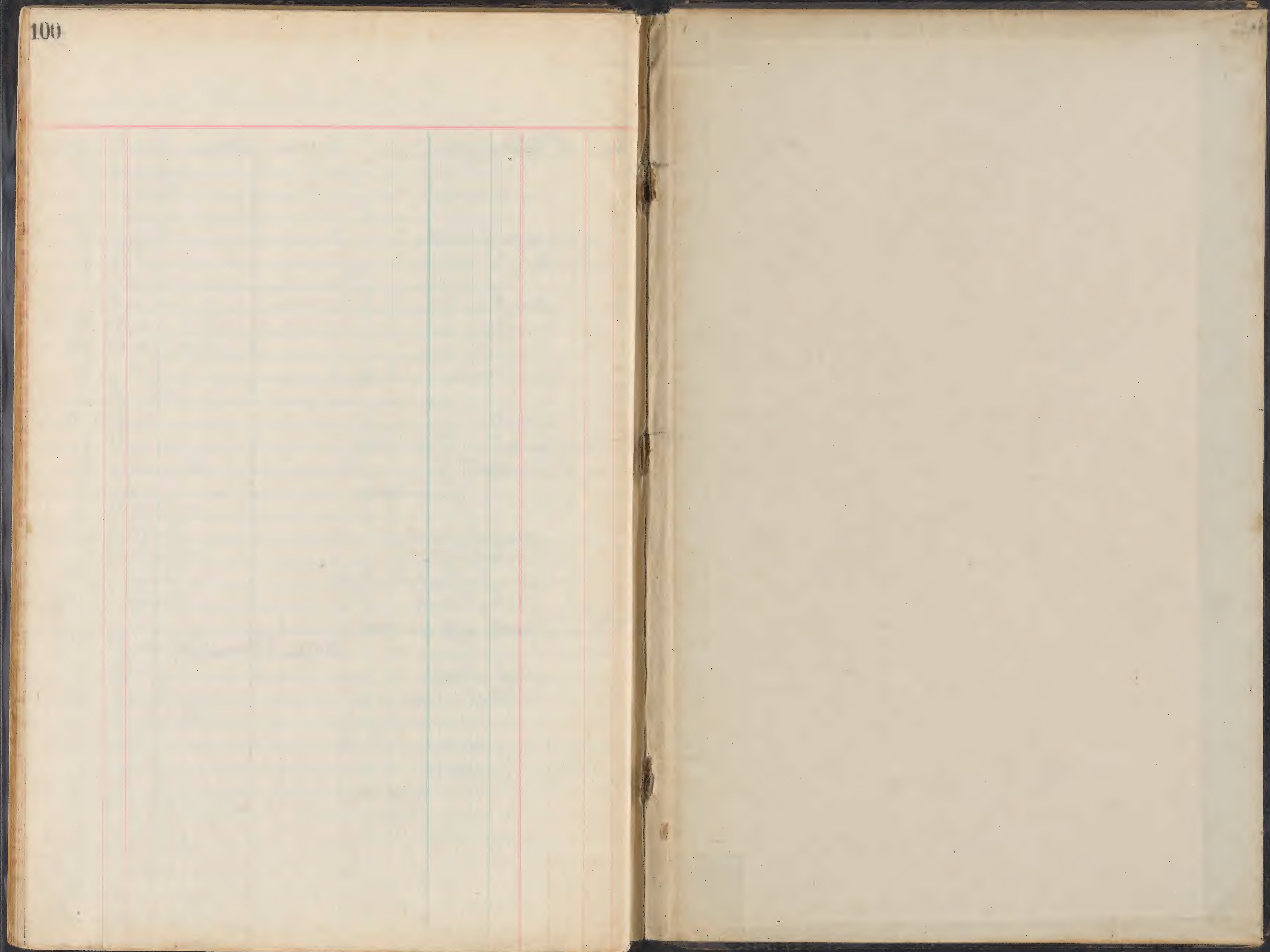
col. purp.

kind with deeper pi; lip greenish-w, spotted deep pi. col. y-g

23181	Cassia	S 5-7'	fr. only
2	Sesbania	WV	Pet. ^{cream} w.
3	Orchid	H ter	Buds deep y-g
4	Grass	H to 5'	
5	Hyptis	H	Cor. tube pink-w, lobes pi.
6	Bidens	H	Rays bright y; fl. gr.-y.
7	Orchid	H ter	Seg. y-g
8	Momina	H ^{4'} w. w. bud	Pet. dark bright blue
9	Cracca "cube"; "muting cube"	S 3-5'	Fr. only
40	Carica papaya	T	Fls. cream-wh.
1	Moss	On bank	
2	Marchantia	" "	
3	Citrus	T 15-20'	Fr. very sweet, few seeds
4	Ingua	T ^{20'} (slope) ^{40'} (steep slope)	Stamens wh.; pi. tinged, some
5	Cissampelos	HU	infl. pink.
6	Sapium	1 5-20' with	flowers wilted
7	Melothria	HU	drooping infl.
8	Lycopodium	H	fr. g., w. mottled
9	Psidium	T 12-15'	cor. green, ant. dull r.
200	Lupatic.	on dry bank	
1	Orchid	H ter	per. seg. w.
2	Lichen	on tree	at length deep pur.
3	Psychotria	S 8-12'	lvs. of infl. y.; cor. green y.
4	Lesouena	H	cor. o.r.
5	Saucleria	S 12-15'	bracts r.; cor. light y
6	Rhipidopterus	H on moist bank	
7	Peperomia	H ter	
8	gesner.	H up to 3'	cal. tube greenish w, lobes r
9	Cavendishia	S 8-15'	cor. p. tube deep r, lobes g.
10	Hymenophyllum	H as quest	
1	Lichen	on moist bank	
2	Lycopodium	H " "	pet. w.
3	Moss	on " "	
4	Weinmannia	S 12-20'	
5	Hydrocotyle	H repeat	pet. greenish w.

May	15	Edge of open woods	100 m.	Aina		
		open hillside				
May	16	thickets	800 m.			
		Cultivated	"		A-97	Pl-K
		open hillside			A-98	Pl-K
		Cultivated			B-2	Pl-K
		yard				
	17	thickets				
		shaded banks				
		thickets woods				
		open hillside				
		rocky bank				
		edge of woods				
		deep woods				
		edge of woods				

1000 m. (Aina-Carapa)





N 43

F. Smith

Patent of
Invention
in

21501 - 30703

Collection from Jamaica

Ellsworth E. Killip.

- 1 - 8. Kingston-Rockfort Road. 2/18/16.
- 9 - 15. South Camp Road, Kingston. 2/15/16.
- 16- 20. Kingston-Rockfort Road. 2/15/16.
- 21- 22. Along streets, Kingston. 2/14/16.
- 23- 24. Kingston-Rockfort Road. 2/15/16.
- 25- 28. Long Mountain, Kingston. 2/17/16.
- 49- 60. Spanish Town Road. 2/18/16.
- 61- 71. R. R. tracks to 3 miles west of Kingston. 2/18/16.
72. Spanish Town Road. 2/18/16.
- 73- 80. R. R. tracks to 3 miles west of Kingston. 2/18/16.
- 81- 82. Shore of Hunts Bay. 2/18/16.
- 83- 85. (do. 73-80)
- 86- 88. Shore of Hunts Bay. 2/18/16.
- 90- 94. (do. 73-80)
- 95-101. Papine. 2/20/16.
102. Streets of Kingston. 2/20/16.
- 103-128. Papine-Gordon Town Road. 2/20/16.
- 129-145. " " " " and hills. 2/21/16.
- 147-151. Kingston streets. 2/22/16.
- 152-154. Road near Guava Ridge. 2/23/16.
- 155-203. Cinchona; along fairly open trail for about three miles east from house. 2/24/16.
- 204-219. Cinchona: about two miles along Morce's Gap trail. 2/24/16.
- 220-257. Cinchona: on trail to Sir John's Peak (5000-6100 ft) 2/25/16.
- 258-273. Cinchona: near buildings. 2/26/16.
- 274-275 (do. 204-219)

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- 276-306. Cinchona: Morce's Gap. 2/27/16.
- 307-328. Cinchona: (do. 220-257) 2/28/16.
- 329-331. 3 miles east of Guava Ridge. 2/29/16.
- 332-337. Content trail, near Yallis River. 2/29/16.
- 338-345. R. R. tracks to 3 miles west of Kingston. 3/3/16.
- 346-349. Hunts Bay shore. 3/3/16.
- 350-366. Road to Newcastle. 3/5/16.
- 367-368. Cinchona: Sir John's Peak trail. 2/28/16.
- 369-393. Road to Newcastle. 3/5/16.
394. R. R. yards, Kingston. 3/3/16.
- 395-404. Roadside, Ewarto. 3/6/16.
- 405-453. Roadside, Ewarton: hills, and in deep ravine in Mt. Diabolo-Hollymount region. 3/7/16.
- 454-487. Hollymount, generally on side towards Moneague. 3/10/16.
- 488-503. Ocho Rios Road, St. Ann's Bay. 3/9/16.
- 504 Moneague. 3/8/16.
- 505-509. St. Ann's Bay: along shore west of village. 3/9/16.
- 510-518. Moneague. 3/8/16.
- 519-524. Ewarton. 3/8/16.
- 525-527. St. Ann's Bay: cocconut grove west of village. 3/9/16.
- 528-529. Cinchona: 5000 ft. 2/28/16.
- 531 Hunts Bay: 3/3/16.
- 534-537. Port Antonio: roadsides. 3/14/16.
- 538-540. Port Antonio: along shore. 3/14/16.
- 541-542. San Juan, Cuba. 3/15/16.
- 543-544. Santiago de Cuba. 3/15/16.

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3.

547-548. Port Antonio: cemetery. 3/14/16.

549-555. Hollymount-Mt. Diabolo region. 3/3/16.

556-557. St. Ann's Bay: cocoanut grove. 3/9/16.

558 Papine. 2/20/16.

559-562. R. R. tracks, about 2 miles west of Kingston. 3/3/16.

563 Content trail near Yallahs River. 2/29/16.

564 Hunts Bay shore. 3/3/16.

566 Locality missing.

567-568. Cinchona. 5100 ft. 2/23/16.

571 St Ann's Bay: beach. 3/9/16.

578-580. Hollymount 3/10/16.

582 Cinchona: near house. 2/29/16.

583 Kingston streets. 3/11/16.

587 Papine. 2/21/16.

589 Kingston streets. 3/11/16.

591-594. Ewarton. 3/8/16.

596 Near Yallahs River. 2/29/16.

597-599. Hollymount. 3/10/16.

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20a

2605. Clay banks, Juan Diaz, 10/18/17

Letter of Feb. 12

2633. Juan Diaz jungle, 10/25/17

2640. Am sending additional material.

2689. Am sending the best I have. On a trip to this place Mar. 10 I found the plants all dried up. Will make another trip there soon and look more thoroly for more. I should be greatly pleased if you name it as you suggest.

2692. Am sending more material with some measurements. Have not been able to find younger fertile fronds. There are several specimens of this fern but most are not yet fertile. Two or three specimens were of such height that it was impossible to collect material.

2706. Good material of this is hard to find (unless it is the same as 2787). I am sending one more plant, however.

2711-2720. I located this Anemia patch too late to get the fertile fronds in fine condition.

2610. Am sending a series of this. I collected many of this type in Bequete and will send later.

2734. I have no better material on hand. This specimen was found along the Tapia River near its mouth and in a very inaccessible spot. It may be that I can visit it again however.

2745. I am sending another frond. I believe I have sent the rhizome.

2746. See 2787.

2753; 2776. Sending specimens; will try to get more.

2782. Just one plant of this was found. This had four perfect and ^{two} ~~to~~ fragmentary fronds. Mrs. Corman, Miss Colburn and I each had one and I sent you the fourth.

Hope I can find more.

2787. I am sending a plant collected in the same locality on March 10.

2810. Am sending the best I have.

2828. Sending an extra frond of this.

2832. I am sending you some additional material. I expect to make a trip to
Frijoles before returning and will gather more of this.

The label reading 2744 should read 2742.

16211

16212

16213

16214

16215

16216 *Panicum glutinosum* Swartz
Gramineae

16217

16218

16219

16220

16221

16222

16223

16224

Copy - m 54

1 - 604	n 9	1916	24-39
700 - 993	ne. & S	1915-17	40-46
994-1299	" "	"	278-297
1300-1861	" "	"	52-82
1900-1960	" "	"	298-300
2000-2499	" "		84-116
2500-5503	Panama	1917-18	116-255
5991-6710	ne U.S., Fla., France	1918-19	262-276

1-634

Jamaica 1916

1-32
2-23

1-47	n.g.	1916	24-25
48-100 (flank)			
101-336	n.g.	1916	26-32
337-349 (flank)			
350-382	n.g.	1916	33
400-486	n.g.	1916	34-36
487-499 (flank)			
500-530	n.g.	1916	37
531-550 (flank)			
551-604	n.g.	1916	38-39
605-699 (flank)			
700-993	NE US	1916	40-46
994-1299	" "	1915-17	278-297
1300-1692	" "	1916	54-78
1693-1799 (flank) (sub)			
1800-1861	1862-1899 " "	1916	80-82
1900-1960	" "	1915-17	298-350
1961-1999 (flank)			
2000-2499	" "	1916	54-116
2500-2934 (1) Panama		1917-18	116-146
2935-2999 (flank)			
3000-3476	"	1917-18	150-181
3477-3499 (flank)			
3500-3650	"	1917-18	182-190
3651-3999 (flank)			
4000-4358	"	1917-18	192-214
4359-4499 (flank)			
4500-4590	"	1917-18	216-220
4591-4999 (flank)			(over)

5800-5503 Panama 1908 222-255
5504-5990 (flank)
5991-6210 NEUS. Fl. France 1918-19 262-276

16210

16209

16208

16207

16206

16205

16204

16197

16198

16199

16200

16201

16202

16203

Copy 1
Book 1

- 4 = Roadsides
B = Dry fields
Y = ~~Deep~~ Dense forests
Δ = Open woods
♡ = Exposed rocky hillside
λ = Dry, grassy hillside
H = ^{Clay} Banks of small streams
in dense forest
\ = Along rivers in dense forest
~ = ^{Deep,} wet ravines in dense forest
⊗ = On trees, dense wet forest
ε = Dry savannas
o = Wet meadows
Ω = Low, marshy ground near coast
± = On rocks in river course
Π = Rocky banks of stream
Ⓜ = On trees, dense forest
(Many epiphytic ferns are newly
ascended as growing in dense
forests [Y]).

12/4/29 Graves ordered
for these dates, not yet
made.

5063	5270
5038	5273
5049	5306
5130	5307
5136	5367
5134	5391
5138	5429
5156	5445
5159	5459
5191	5472
5187	5476
5137	5477
5207	5463
5238	5496
5248	
5268	

343y

Data for Boquete flowering plants.

- 3500-01. Roadsides, El Boquete, 1300 m., 2/4/18.
3502-09. " " " " 2/5/18.

Along Rio Caldera 1-2 miles above Boquete
Alt. 1300-1350 m., 2/5/18.

3510. Fields.
3511. Rocky cliffs.
3512-14. On fallen trees.
3515. Rocky cliffs.
3516. Grassy shores.
3517. Rocky cliffs.
3518. Fields.

Holcomb's trail 6-8 miles above El Boquete,
1400-1550 m., 2/6/18.

- 3519-20. On wet trees.
3521. Dense forest.

Monniche trail, Chiriqui Volcano, 1700 m.,
2/6/18.

3522. Fields.
3523. Wet trees.

- 3524-26. Fields near El Boquete, 1400 m., 2/7/18.
3527-33. Woods along Griffen's trail, Horqueta Mts.,
1700 m., 2/8/18.
3534-36. Dexter trail, El Boquete, collected by C. P. R.
1500 m., 2/8/18.
3537-38. Deep woods, Valley of Rio Piamasta, 1500 m.,
2/10/18.
3539. Wet mossy rocks, Rio Piamasta, 1500 m., 2/10/18.
3540. Deep woods, Valley of Rio Quebada, 1700 m.,
2/8/18.

Holcomb's trail along Rio Caldera 2-10 miles
above Boquete, 1400-1650 m., 2/11/18.

3541. Open roadsides.
3542-43. Deep woods.
3544. Banks of stream, dense woods.
3545. Dense woods.
3546. Humid forest.
3547-48. El Boquete; open woods; 2/13/18.
3549-51. " " deep " 2/14/18.

El Boquete, Alt. 1450 m., 2/14/18.

3552. Open woods.
3553. " "
3554. Rocky cliffs.
3555. Dead logs.
3556-57. Wet meadows.
3558-61. Humid forest, near Camp I, Holcomb's Trail, 1650-
1800 m., 2/15/18.
3562. Humid forest, near Camp I, " " 1650-
1800 m., 2/17/18.
3563. Clearing near Camp I, " " 1650-
1800 m., 2/18/18.
3564-67. Wet, intensely humid forest of the Cordillera
above Camp I, 1800-2100 m., 2/18/18.
3568. Rocky cliffs, El Boquete, 2/23/18. 1300 m.

Piedro de Lino, 1400-1600 m., 2/24/18.

- 3569-70. Fields.
3571-72. Fallen logs.
3573. Open woods.
3574-75. Exposed barren rocky summit.
3576. Deep woods; Valley Rio Piamasta, 1500 m., 2/25/18.
3577. Wet meadows; " " Panhuro " " "
3578-81. Rocky banks of stream near Aquacatal Camp, Chiriqui
Volcano, 2300 m., 2/26/18.
3582-83. Dry woods, Chiriqui Volcano, 2300 m., 2/27/18.
3584-86. " " " " 2450 " 2/27/18.
3586-90. Camp Cañassa, 2500 " 2/27/18.
3591-92. Above Potrero Camp, 2900 " 2/27/18.
3593-3600. Rocky summit, Volcane, 3600 " 2/27/18.

3601. 3300 m., 2/27/18.
 3602. Near Potrero Camp, 2800 m., 2/27/18.
 3603. " " " 2600 " 2/28/18.
 3604. " " " 2200 " 2/28/18.
 3605-06. " " " 1900 " 2/28/18.
 3607. Roadsides, Boquete 1350 " 2/28/18.

1-2 miles south of Boquete along Rio Caldera
1250 m., 3/1/18.

3608. Roadsides.
 3609-13. Open woods.
 3614-25. Wet meadows.
 3626-27. Roadsides. 3/2/18.
 3628. Wet meadow. "
 3629. Field. "
 3630-32. Wet meadow. "
 3633. Roadsides. "
 3634. Wet meadow. "
 3635-36. Batia River; E. Chiriqui, 3/3/18.

Boquete, 1250 m., 3/3/18.

3637. Open woods.
 3638. Roadsides.
 3639. Open woods.

----- DATA FOR BOQUETE GRASSES & SEDGES -----

- 4500-04. Railroad track, David, 2/4/18.
 4505-07. Roadsides, Boquete, 2/5/18.
 4508-09. Fields, " "
 4510. Open woods, Rio Caldera, 1-2 miles above Boquete, 2/5/18.
 4511-12. Rocky cliffs. " " " " " "
 4513-15. Gravelly banks of streams (same as 4511-12)
 4516. Deep woods " " " " 2/6/18.
 4517-22. Fields near Lino Boquete, 2/7/18.
 4523-25a. Clearing in deep woods, Rio Piedra, 2/9/18.
 4526-27. Dry roadsides, Boquete, 2/11/18.
 4528. Rocky shores of river, Rio Caldera above Boquete, 2/11/18.
 4529-30. Open woods along Rio Caldera, 2 miles " " 2/14/18.
 4531-34. Wet meadows, O'Donnell Ranch, " " " " 2/14/18.
 4535. Rocky cliffs, 1575 m., 4 " " " 2/15/18.
 4536-38. Clearing at Camp I, Holcomb's Trail, 1650 m., 2/17/18.
 4539-40. Clearing near Big Falls of Piedra, 1550 m., 2/22/18.
 4541. Rocky cliffs, Boquete. 2/23/18.
 4542. Roadside, Lino Boquete. 2/24/18.
 4543-44. Open woods, Piedra de Lino, 2/24/18.
 4545. Fields, " " " 2/24/18.
 4546-47. Rocky banks of stream near Aguacatal Camp, 2300 m., 2/26/18.
 4548-50. Sandy soil, El Petrero Camp, 2900 m., 2/27/18.
 4551-53. Rocky summit of Volcano, 3600 m., 2/27/18.
 4554-55. Dry woods, Chiriqui Volcano, 2100 m., 2/28/18.

1-2 miles south of Bajo Boquete, 1250 m.

3/1/18.

4556. Open woods.
 4557-60. Fields.
 4561-62. Wet meadows.
 4563-65. Fields.
 4566. Wet meadows.
 4567. Fields.
 4568-75. Wet meadows.
 4576. Roadsides.
 4577-79. Wet meadows?
 4580. Wet meadows. 3/2/18.
 4581. Fields. "
 4582-87. ~~Fields~~ Wet meadows 3/2/18.
 4588. Fields.
 4589. Grassy shore, Batia Bay, eastern Chiriqui. 3/5/18.
 4590. Wet meadows. Bog. 3/2/18.

Rio Caldera, 1 to 2 miles above Lino Boquete, Alt.

1250 m. Date 2/5/18.

- 5000. Shady banks of trail.
- 5001. Open woods.
- 5002. Climbing over boulders.
- 5003. Open woods.
- 5004. Deep woods.
- 5005. On wet trees, deep woods.
- 5006-8. Rocky cliffs.
- 5009. On trees, deep woods.
- 5010-11. Rocky cliffs.
- 5012. Deep woods.
- 5013. Rocky cliffs.
- 5014. On trees, deep woods.
- 5015-19. Rocky cliffs.
- 5020. Woods.
- 5021. On fallen logs, partly in water.
- 5022-24. Rocky banks along trail.
- 5025. On trees.
- 5026. Rocky cliffs.
- 5027. Wet trees, deep woods.
- 5028. Rocky cliffs.
- 5029. On boulders in open woods.
- 5030-34. Rocky cliffs.
- 5035-36. Deep woods.
- 5037-39. Wet trees, deep woods.
- 5040-44. Deep woods.
- 5045-. Gravelly stream bottoms.

Holcomb's Trail, deep forest along Rio Caldera

8 to 10 miles above Lino. Alt. 1400 to 1550 m.

2/6/18.

- 5046-49. On wet trees in deep woods.
- 5050. Very dense woods.
- 5051-52. Wet trees in deep woods.
- 5053-54. Deep woods.
- 5055-56. Wet mossy cliffs.
- 5057-61. Deep wet woods.
- 5062-65. Wet fallen logs, humid forest.
- 5066-67. Wet trees in humid forest.
- 5068. Wet mossy cliffs.
- 5069-70. Humid forest.
- 5071. On trees in wet forest.
- 5072-74. Humid forest.
- 5075-79. On wet trees, humid forest.
- 5080. Deep woods.
- 5081. On trees, deep woods.

5082-91. Very deep woods. Between Holcomb's Trail and Monniche plantation, 1500 to 1725 m., 2/6/18.

5092. Twining up trees, open trails, Iglesia Boquete, 1400 m. 2/6/18.

5093-94. Roadsides, Iglesia Boquete, 1400 m. 2/6/18.

5095. Open woods, Boquete, 1275 m., 2/6/18.

Along Griffen's Trail, Horqueta Mts., 1675-1735 m., 2/8/18.

5096-97. Humid forest.

5098. Fallen trees, deep forest.

5099-5103. Wet trees in humid forest.

5104. Humid forest.

5105-06. Wet trees, humid forest.

Cerro de Pelona, 1750 m., 2/8/18.

5107-08. On wet trees.

5109-11. Deep woods.

5112. Open woods.

5113-14. Wet trees in deep woods.

5115. Fallen logs.

Valley of Rio Quebrada, 1650 m., 2/8/18.

5116-24. Humid forest.

5125-27. Open woods.

5128-32. Wet trees.

5133-36. Deep woods.

5137. Open trails.

Valley of Rio Piarnasta, 1525-1550 m., 2/9/18.

5138. Open trails.

5139. On fence in open woods.

5140-41. Open woods.

5142-47. Deep woods.

5148. On fallen trees, deep woods.

5149-50. On tree along open trails

5151-52. Humid forest.

5153. On trees, humid forest.

5154. Open woods.

Valley of Rio Piarnasta, 1525-1575 m., 2/10/18.

5155-56. Rocky banks of river.

5157. Deep woods.

5158. On trees, deep woods.

5159-65. Very dense forest.

5166-67. On trees, dense forest.

5168. Deep woods.

Holcomb's Trail, 6-10 miles above Lino Boquete,

Alt. 1400-1600 m. 2/11/18.

- 5169. Deep woods.
- 5170. Rocky cliffs.
- 5171. Deep woods.
- 5172. Gravelly stream-bottoms, exposed.
- 5173. Deep woods.
- 5174. Rocky cliffs.
- 5175-81. Deep woods.

- 5182. On trees in deep woods.
- 5183. Deep woods.
- 5184-87. Along rocky banks of streams.
- 5188-91. Humid forest.

Holcomb's Trail, Upper Caldera River, 10-11 miles

above Boquete, 1625 m. 2/11/18.

- 5192. Wet mossy cliffs.
- 5193. Rocky banks of stream.
- 5194-96. Mossy rocks in river.
- 5197. Rocky banks of stream.
- 5198-5201 " " " "

Holcomb's Trail, 8-10 miles above Lino Boquete;

1400-1550 m. 2/11/18.

- 5202. Climbing tree trunks, humid forest.
- 5203. On trees.
- 5204-08. Humid forest.
- 5209-10. On trees, humid forest.

El Boquete, 1300 m. 2/14/18.

- 5211-13. Open woods.
- 5214. Along stream, open woods.
- 5215. Dry rocky cliffs.
- 5216. Open banks of Rio Caldera.
- 5217. Wet meadows.
- 5218-19. Wooded banks.
- 5220. Along streams.
- 5221. Sandy shores of streams.

Holcomb's Trail, 10 miles above Lino Boquete,
Camp I. 1525-1650 m. 2/15/18.

- 5222-23. Humid forest.
 5224-25. Wet mossy banks.
 5226-28. On trees, humid forest.
 5229-34. Humid forest, south of Camp I.
 5235. Clearing Camp I.
 5236-38. Wet trees, humid forest, south of Camp I.
 5239. Dense, open thicket, Camp I.
 5240. Humid forest.
 5241. Wet rocks and logs.
 5242-48. Humid forest.
5249. Trees along open trails, Dexter trail. 1500 m.

Holcomb's Trail near Camp I, 1650 m. 2/17/18.

- 5250-56. Dense woods.
 5257. On trees, borders of woods.

Cordillera above Camp I. along an old hunting trail opened up by guides. Course lay north from Camp I, up 400-500 m. east along the Cordillera for 1 mile, then down Atlantic side for some 50 m. Forest was uniformly dense, intensely humid with bubbles of yellowish water dripping from the moss and ferns.

5258-5285.	1650-1800 m.	2/17/18.
5286-5305.	1800-2000 m.	"
5306-5320.	1900-2100 m.	2/18/18.
5321-5333.	2100-2150 M.	2/18/18.
5334-5335.	Near Camp A, 1625 m.	2/18/18.

Holcomb's trail from Camp I. to summit of Cordillera and 3 miles down on Atlantic side. Humid forest, less than above tho. Alt. as indicated.

5336-5346.	1675-1800 m.	2/19/18.
5347-5358.	1800 to summit	2/19/18.
5359-5367.	Summit to ? Atl. side.	2/19/18.
5368-5370.	" " 1675 m.	2/19/18.
5371.	Borders of woods near Camp I. 1700 m.	2/19/18.
5372.	Humid forest near Camp I. 1700 m.	2/19/18.
5373-75.	On fallen logs in clearing near Camp I.	1700 m. 2/19/18.

Valley of the Rio Pianasta 1550-1650 m. 2/22/18.

- 5376-82. Dense woods.
5383. Clearing near Big Falls.
5384. Fallen trees, deep woods.
5385. Deep woods.
5386. Climbing trees, deep woods.
5387. On trees.
5288-90. Clearing near Big Falls.
5391-94. Deep woods near Big Falls.
5395-96. On large wet boulders near Big Falls.
5397-5401. On large mossy trees, deep woods.
5402. Banks of small streams.
5403-04. Climbing over fallen logs.
5405. Tops of tall trees; deep woods.

5406. Trail up Volcano, coll. by I. W. Watson. 2/23/18.
5407-08. Rocky cliffs, Boquete, 1350 m. 2/23/18.

Piedro de Lino, 1400-1500 m. 2/24/18.

5409. On trees.
5410. On rocks.
5411. On fallen trees.
5412. On rocks.
5413. Open woods.

Valley of Rio Panduro, 1500 m. 2/25/18.

- 5414-5417. On dry tree trunks.
5418-20. Open woods.

Roballo Trail, from Rio Pianasta towards
Cordillera, 1600-1700 m.

5421. Open woods.
5422-28. Dense forest.
5429-31. Climbing up trees, dense forest.
5432. Dry trees.
5433. Summit volcano 3600 m., J. W. Watson, 2/22/18.
5434-36. Rocky banks of stream near Aquacatal Camp, Chiriqui
Volcano, 2300 m., 2/26/18.
5437-40. Dry woods, (same as 5434-36)
5441-42. Trail up volcano, 3400 m., 2/26/18.
5443. Same as 5434-36.
5444-47. Open woods. Camp Cañassa, Chiriqui Volcano, 2500 m.,
2/26/18.

5448. Open woods, trail up volcano, 2650 m., 2/27/18.
 5449. Sandy soil, Potrero Camp, 2800 m., 2/27/18.
 5450-57. Dense dry woods above Potrero Camp. 2800-3100 m.,
 2/27/18.
 5458-61. Summit of Volcano, 3600 m., 2/27/18.
 5462-64. Dry woods. 3100 m., 2/27/18.
 5465. Dry woods. Aguacatal Camp. 2300 m., 2/28/18.
 5466-68. Dry woods. " " " " "
 5469. Summit of Volcano, 3600 m., 2/27/18.
 5470-71. " " " 3000 " "
 5472. " " " 2600 " "
 5473. Rio Piafista, M. A. C. 1450 m., 2/28/18. *run*

Along Rio Caldera 1 mile below Boquete 1250 m.,
3/1/18.

- 5474-76. Open woods.
 5477-79. Wet meadows.
 5480. Open woods.
 5481-85. Wet meadows. 3/2/18.
 5486. Open woods. 3/2/18.

- 5487-91. Open woods along Rio Caldera, 1-2 miles above
 Boquete. 1300 m., 3/3/18.

Phillips 2/1/44
Complete itinerary
for remainder of
post bond

Miss Anna T. [unclear]

Jacquemontia Sp.

3390

3355

3350

3345

3340

} all same sp

Panama

3441. *Sporococcolobus* Tenorio

Lam.

3200. *Apeiba*

tuberosa

Aubl.

3340. *Jacq. pentantha*

G. Don

3353. " "

3413. *Cham. prostrata*

(Ait.) Sull.

3263. *Schultesia heterophylla*

Miq.

3237

"

~ 4538^d

Dennstedtia ~~at.~~
beyrennata

(Cav. 11/10/18)

(advent)

✓ ?

also 5003

Chert
Ole
over

ST. BERNARD COLLEGE HERBARIUM
FLORA OF ALABAMA

Azalea alabamensis (Rehder) Small
Woods--widely distributed through-
out County
Cullman County, Alabama
May 14, 1939

Collector, W. Wolf **Morgan**

St. Bernard, Ala.

#

3150. *Hymenocallis*
littoralis Salisb.

3075. *Elaterrum*
ciliatum Cogn.

3397. *Fresene celsia*
~~3~~ L.

3074. *Pathecolobium*

~~30~~

EXPLORATION IN PERU

Dept. Loreto: San Antonio, on Río Itaya; alt. about 110 meters; dense forest

No. E. P. KILLIP } Collectors
A. C. SMITH } September 18, 1929

Collected under the auspices of the Smithsonian Institution

- EMC Eleocharis det Sw.
4533. retroflexa (Poir.) Urb.
4091. nodulosa (Roth) (under
Schmet. sulcata)
4531. sulcata Nees
- 4585 " " (under
E. capitata)

EXPLORATION IN PERU

Dept. Junín : Tarma ; alt. 3000-3200 meters ; open hillside

No. E. P. KILLIP }
 A. C. SMITH } Collectors April 20-22, 1929

Collected under the auspices of the Smithsonian Institution

11 7163a

Carex brunnescens gracilior
Buckley

EXPLORATION IN PERU

Dept. Junín : Tarma ; alt. 3000-3200 meters ; open hillside

No. E. P. KILLIP } Collectors April 20-22, 1929
 A. C. SMITH }

Collected under the auspices of the Smithsonian Institution

K 6201

Cypræa cylindrica

(Eel-Breeder)

EXPLORATION IN PERU

Dept. Junín : Tarma ; alt. 3000-3200 meters ; open hillside

No. E. P. KILLIP }
 A. C. SMITH } *Collectors* *April 20-22, 1929*

Collected under the auspices of the Smithsonian Institution

K 1557

Carex stellulata sterilis
(Willd.) Carey

(under *C. canescens* distinct)

EXPLORATION IN PERU

Dept. Junín : Tarma ; alt. 3000-3200 meters ; open hillside

No. E. P. KILLIP }
 A. C. SMITH } *Collectors* *April 20-22, 1929*

Collected under the auspices of the Smithsonian Institution

11 1345-

Canex brunnescens sphaer-
stachya
(Pers.) Kuhn.

(not *C. trifenna*)

EXPLORATION IN PERU

Dept. Junín: Tarma; alt. 3000-3200 meters; open hillside

No.	E. P. KILLIP A. C. SMITH	} Collectors	April 20-22, 1929
-----	-----------------------------	--------------	-------------------

Collected under the auspices of the Smithsonian Institution

K 1522

Carex vesicaria L.

EXPLORATION IN PERU

Dept. Junín: Tarma; alt. 3000-3200 meters; open hillside

No.	E. P. KILLIP A. C. SMITH	} Collectors	April 20-22, 1929
-----	-----------------------------	--------------	-------------------

Collected under the auspices of the Smithsonian Institution

K 1529

Carex lundula gracilis Boott

EXPLORATION IN PERU

Dept. Junín : Tarma ; alt. 3000–3200 meters ; open hillside

No.	E. P. KILLIP A. C. SMITH	} Collectors	April 20–22, 1929
-----	-----------------------------	--------------	-------------------

Collected under the auspices of the Smithsonian Institution

191515-

Canes pedunculata (Desv.) Britton

(under *C. communis*)

EXPLORATION IN PERU

Dept. Junín : Tarma ; alt. 3000-3200 meters ; open hillside

No. E. P. KILLIP } Collectors April 20-22, 1929
 A. C. SMITH }

Collected under the auspices of the Smithsonian Institution

Leafy Green

Send Vegetables

4001 should be 5341 *Asplenium*
uniseriale Radd.

Originally there were 2 sp. for 4001

Day. *Lichium* remains 4001 & *A. uniseriale* was
given name of 5341.

Polypodium vulpinum Linden.

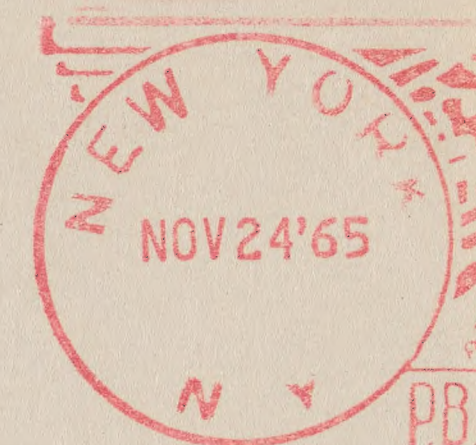
rapicola C. Chr.

Polypodium.

NATIONAL
REVIEW

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New York, N.Y. 10016

FIRST CLASS MAIL



2679

S S SMITH 3RD
~~GENERAL DELIVERY~~
WILLIAMSBURG VA

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1965

~~to~~ to
for medical
for list

Mishuac

115 m alt. (15 Km. s.e. of Iguala)

1-2 (San Juan) woods

2-4 (Between Tierra Blanca & Mishuac) dense forest.

You'll probably want to give me help for collecting
so much this area, but God knows the S. J. vegetation
has changed! Notes are with each specimen. Sketch
any you are sure we have.

Sr. Smith